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The implementation of financial planning and cost accounting instruments in startups

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Abstract

This master thesis examines the question of how financial planning and cost accounting instruments are implemented in startups depending on their development stages. For this purpose, eleven semi-structured interviews were conducted with executives of startups in different development stages and an external expert. The results of this study show that startups follow a uniform approach along the development stages when implementing financial planning. Regarding the implementation of the individual financial planning instruments and cost accounting, various implementation differences and development steps between the development stages were identified. These differences and development steps are related to the industry, company growth, and business model expansion of the startups. Overall, this master thesis provides new and valuable insights for startups and scientists. For startups, the results are indications for the implementation and expansion of financial planning and cost accounting. For the scientific community, the results of this thesis represent the first cross-stage investigation of the implementation of specific management control systems.

Keywords: Startups; Financial planning; Cost accounting; Management control systems.

1. Introduction

1.1. Motivation

Startups are crucial for stable economic growth, innovative strength, and the long-term competitiveness of an economy.[1] Examples such as N26 or Delivery Hero show how startups create new jobs with disruptive business models, put established companies under pressure to remain innovative, and improve the everyday lives of their business partners or customers. However, before startups reach such a level of maturity as N26 or Delivery Hero, they undergo numerous transformation processes during their growth, in which they must overcome many internal and external challenges.[2] The internal challenges of growing startups include increasing problems in coordination and communication, the emergence of new functionalities and more interrelated jobs, and the multiplication of management hierarchy levels.[3] In addition, startups are confronted with increasing

competitive pressure, environmental uncertainties, and constantly changing technologies.[4] To deal with these increasing challenges, managers regularly adopt Management Control Systems (MCSs), such as financial, human resource or strategic planning tools, in the early development stage of their startup.[5] Such MCSs help startups to professionalize by making the necessary transformation from an informal to a formal, information-based management approach.[6] In this way, MCSs support the management, for example, by supplying the information needed for decision making, but also by preventing a loss of control due to a lack of monitoring.[7] Consequently, MCSs are considered as an important instrument to promote company growth.[8]

Given the positive impact of MCSs on the development of startups, numerous scientists have examined MCSs in startups in greater depth over the past decades. These studies can be summarized into three overarching lines of research.

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[1] Cf. Zinke et al., 2018, p.20.

[2] Cf. Greiner, 1998, p.56; Bourne, 2014, p.97. When indicating several sources, the order of the sources depends on their importance for the respective subject matter.

[3] Cf. Greiner, 1998, p.56.

[4] Cf. Bourne, 2014, p.97.

[5] Cf. Davila & Foster, 2007, p.907; Sandino, 2007, p.265.

[6] Cf. Davila (2005), p.224.

[7] Cf. Davila & Foster, 2007, p.908; Sandino, 2007, pp.265f..

[8] Cf. Davila & Foster, 2007, p.930; Davila & Foster, 2005, p.1041; Davila, Foster, & Jia, 2010, p.87.

A first set of studies examined the relevant MCSs in startups. Here, Davila and Foster have shown that financial planning represents the earliest and most frequently adopted MCS category, followed by human resource and strategic planning.[9] In contrast, cost accounting, as a subset of MCSs[10], receives less attention in new economy firms, according to Granlund and Taipaleenmäki.[11]

A further set of studies has examined numerous variables that influence the adoption of MCSs. For example, Davila and Foster found associations between the adoption rate and venture capital financing or the number of employees.[12]

A last set of studies has investigated the impact of MCSs on the development of startups. These studies have identified, for instance, improved performance[13] and higher company valuations[14] of startups through the integration of MCSs.

However, these studies have disregarded the qualitative implementation of MCSs. Since the implementation also potentially influences the company's development, there is still a need for further research in this area. Davila and Foster identified initial qualitative differences in the implementation of MCSs as part of a field study, without further investigating this issue.[15] Accordingly, the qualitative implementation of MCSs, especially with regard to the different development stages of startups, is still unclear and calls for further research.

1.2. Objectives and methodology

Against this background, this master's thesis aims to address this research gap and examines the implementation of specific MCS instruments, using the example of financial planning and cost accounting tools, in startups, depending on their development stages (early, expansion, and later stage). Accordingly, the primary objective of this thesis is to answer the following research question:

How do startups implement financial planning and cost accounting instruments, depending on their development stages?

By investigating this research question, this study also aims to identify commonalities and differences in the development stage-specific implementation of financial planning and cost accounting instruments. Finally, this study has the objective of elaborating an overview in which the qualitative development steps of financial planning and cost accounting between the development stages are illustrated.

In order to examine the research question, a qualitative field study was conducted. Field studies aim to gain a deeper understanding of a research topic and are suitable for obtaining explanations and justifications from the practical environment.[16] Considering the still unexplored research area to be investigated, this approach is appropriate in order to generate initial results in a startup setting. For this purpose, a total of eleven semi-structured interviews were conducted with executives from startups of different development stages and industries as well as an external expert, from whom more in-depth explanations of the startups' approaches to implementing financial planning and cost accounting could be obtained.

1.3. Structure

This master's thesis is structured into six chapters. In order to ensure an adequate theoretical understanding, the second chapter of this thesis defines relevant terms, presents the current state of research on MCSs, and introduces the relevant concepts of financial planning and cost accounting. Subsequently, chapter three justifies the choice of the qualitative research approach in more detail, before describing the selection and sample of the interview partners and the procedure for the analysis of the semi-structured interviews. In chapter four, the results of the data analysis on the implementation of financial planning and cost accounting instruments in startups are presented according to the specific development phases. These results are discussed in the fifth chapter of this thesis, where they are compared and contrasted with the existing literature and expectations. Finally, the conclusion of this thesis answers the research question and offers outlooks for future research.

2. Theoretical foundations

In order to ensure a comprehensive understanding of the present thesis, this chapter introduces the necessary theoretical framework concepts concerning the research question. In the opening section of this chapter, the essential characteristics of a startup company will be described in more detail. Subsequently, the second section introduces the fundamentals of MCSs and the current state of research on MCSs. In the following two sections, the basics of financial planning and cost accounting, as the two authoritative control systems for this thesis, will be presented. Finally, a brief summary will outline the current state of research and justify the necessity of the research subject.

2.1. Characteristics of a startup

In the context of this thesis, startup companies from different development stages will be considered. To ensure a consistent conceptual understanding, this section defines the term startup and introduces the relevant development stages.

2.1.1. Definition of a startup

The literature contains many definitions for startup companies, of which none has yet proven to be authoritative or universally valid.[17] Therefore, it is even more important to

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[9] Cf. Davila & Foster, 2007, p.907.

[10] Cf. Chenhall, 2003, p.129; Davila & Foster, 2005, p.1040.

[11] Cf. Granlund & Taipaleenmäki, 2005, p.34.

[12] Cf. Davila & Foster, 2007, p.907.

[13] Cf. Sandino, 2007, p.265.

[14] Cf. Davila, Foster, & Jia, 2015, p.207.

[15] Cf. Davila & Foster, 2007, p.934.

[16] Cf. Yin, 2009, p.9; Miles, Hubermann, & Saldaña, 2014, p.11.

[17] Cf. Weber, 2016, p.12; Luger & Koo, 2005, p.17; Zaech & Baldegger, 2017, p.158.

define a precise terminology of a startup for the following thesis.

Initially, the term startup was associated with a company in its early development stage.[18] Since this definition includes all types of new businesses, it was further specified to distinguish between general business foundations and startup companies.[19] The most common definition of a startup in academic literature is provided by Blank[20], who defined a startup as "a temporary organization designed to search for a repeatable and scalable business model."[21] Skala examined Blank's definition more closely and identified two key characteristics of a startup company in his definition. First, startups look for a business model characterized by uncertain market demand, and second, the startup's business model must be able to scale. As part of her study, Skala examined numerous other startup definitions from scientists, institutions, and entrepreneurs and identified a total of four critical characteristics of a startup company, as follows:

- A startup is a young company and has limited resources;

- It offers innovative solutions in an innovative way;

- It is ambitious and fast-growing, and

- It operates in the digital industry.[22]

Kollmann et al. have taken up the criteria listed above in the German Startup Monitor and defined a startup as a company that is "younger than ten years, [is] growth-oriented in terms of [its] employees/sales and/or (highly) innovative in terms of [its] products/services, business models and/ or technologies."[23] Therefore, to be classified as a startup company according to their definition, the company must fulfill the first criterion (younger than ten years) and at least one of the last two criteria (growth-oriented and/or innovative). Thus, the German Startup Monitor understands a startup as a young company with an innovative and/or scalable business model.[24] The operating industry as a further classification criterion was deliberately omitted from this definition.[25] Consequently, Kollmann et al. included startup companies from all sectors in their study. They revealed that overall, 90% of the startups studied had business models that were digital (e.g., IT solutions) or hybrid (mixture of digital and analog, such as technology development and production), and the remaining 10% of the startups had an analog business model (e.g., stationary commerce).[26] Accordingly, most

startups originate from the digital industry, despite the deliberate omission of the industry classification criterion.

This thesis links the definition of the German Startup Monitor with the startup characteristics by Skala. Thus, a startup in the context of this thesis is defined as a company that is "younger than ten years, [. . .] growth-oriented in terms of [its] employees/sales [. . .], (highly) innovative in terms of [its] products/services, business models and/or technologies"[27] and operates in the digital industry.[28]

2.1.2. Development stages of a startup

During their growth, startup companies go through different development stages, characterized by diverging goals, tasks, and challenges. Three overarching stages – the early, expansion, and later stage – have been established as decisive in the literature.[29] Sometimes these stages are further fragmented to characterize the startup's development state more in-depth.[30] In the following, these development stages are described in more detail with regard to their further subdivision, tasks, goals, and challenges.

Early stage

Startup companies begin their development process in the so-called early stage. The early stage starts with the development of an idea for a potential product/ service, business model or technology and ends with the founding of the startup and generating the first revenues.[31] According to the German Startup Monitor, 73.1% of the examined startups are in the early stage, which therefore represents the quantitatively largest development phase.[32] In the literature, this stage is often further subdivided into the pre-seed-, seed-, startup- and occasionally also into the first stage.[33]

In the pre-seed stage, the idea generation and feasibility analysis are the focus of activities.[34] The future founders analyze in this context the market potential and acceptance of future users of their business idea, the resource requirements and availability, and evaluate their idea with other founders. At the end of this stage, a rough concept of the business idea should be defined.[35]

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[18]Cf. Csaszar, Nussbaum, & Sepulveda, 2006, p.151; Zaech & Baldegger, 2017, p.158.

[19]Cf. Kollmann, Jung, Kleine-Stegemann, Ataee, & de Cruppe, 2020, p.18.

[20]Cf. Spender, Corvello, Grimaldi, & Rippa, 2017, p.4; Skala, 2019, p.15.

[21]Blank, 2013, p.67.

[22]Cf. Skala, 2019, pp.16-21.

[23]Kollmann et al., 2020, p.14.

[24]Cf. ibid., p.18.

[25]Cf. Kollmann, Stöckmann, Hensellek, & Kensbock, 2016, p.14.

[26]Cf. Kollmann et al., 2020, p.24.

[27]Ibid., p.14.

[28]Cf. Skala, 2019, p.21.

[29]Cf. Schachel, Lachmann, Endenich, & Breucker, 2021, p.682; Kollmann, 2019, p.135; Tech, 2014, p.3.

[30]Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.5; Passaro, Rippa, & Quinto, 2016, p.8; Tech, 2014, p.3.

[31]Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, pp.5f.; Kollmann, 2019, p.134; Passaro et al., 2016, p.8; Tech, 2014, p.3.

[32]Cf. Kollmann et al., 2020, p.21. In this context, the German Startup Monitor divides the early stage into the seed- and startup stage. In total, 1,946 startup companies (without industry restrictions) were analyzed in the study (cf. Kollmann et al., 2020, p.21).

[33]Cf. Kollmann, 2019, p.134; Sammer, 2021. Salamzadeh and Kesim (2015), Passaro et al. (2016) and Tech (2014) use other nomenclatures for the stages; however, their term explanations are synonymous with the mentioned phases (Cf. Salamzadeh & Kesim, 2015, pp.5f.; Passaro et al., 2016, pp.9ff.; Tech, 2014, p.3).

[34]Cf. Kollmann (2019) p.134; Passaro et al., 2016, p.8.

[35]Cf. Sammer, 2021; Passaro et al., 2016, p.8.

The rough concept is further developed in the subsequent seed stage to create the business plan at the end of this phase.[36] Furthermore, the prototype and a detailed foundation plan are developed, including decisions like the choice of the legal form, the accounting system, and the definition of the strategy, goals, and unique selling proposition.[37] Salamzadeh and Kesim emphasize that the seed stage is characterized by a great financial requirement, for instance, for developing and refining the prototype. Therefore, the search for accelerators, incubators or angel investors is essential in this development stage to become a profitable company in a later phase due to the assistance of supporters.[38] Since these startup-supporting organizations and individuals play a subordinate role for this thesis, a more in-depth explanation of these supporters will be omitted.[39] However, it should be noted that many founders do not find any supporters in this phase and thus fail.[40]

Once the business plan is defined, the prototype developed, and a detailed foundation plan established, the startup stage begins. During the startup phase, the company is founded, and the product's market launch is prepared.[41] In addition to numerous legal activities (such as business registration or shareholder agreement), production planning and preparation, supplier acquisition and the establishment of a distribution network are also conducted during this stage.[42] As soon as the preparations for market launch are complete, customer acquisition through marketing campaigns will be essential to generate the first sales.[43] Once the first customers have been acquired, the first stage begins.[44] The literature often considers the first stage as part of the startup stage and makes no further distinction between these phases.[45] In the first stage, the founded startup commences its operational business activity and generates its first revenues.[46] Furthermore, the first employees are hired, and the processes and structures in the company become more professional.[47] Due to the high financial requirements for the foundation process and the market launch, startup companies often resort to venture capital financing during the startup- and first stage.[48] This type of financing is explained in more detail below.

Startups are associated with a high level of risk for external financiers due to their innovative business model and significant information asymmetries, primarily caused by the novelty of their product and limited revenue and profit history.[49] Therefore, they usually have no access to credits from debt financiers.[50] Venture capital organizations are equity financiers who invest considerable resources into the understanding of new technologies and markets on the one hand[51], and secure control and participation rights over strategic decisions at the startups when investing on the other hand[52], which allows them to handle the risk of their investment. Therefore, they support the startups as active investors, not only by providing equity for rapid growth but also their expertise in hiring new executives, their access to networks or their management experience in return for a stake in the company.[53]

Thus, the early stage concludes with the generation of the first sales and the hiring of employees. Giardino et al. investigated in a survey the key challenges of software startup companies in the early stage. They concluded that the development of innovative products is the greatest challenge in the early stage, followed by the acquisition of the first paying customers, the acquisition of the initial funding and the formation of motivated teams.[54] Wang et al. reached similar conclusions in their study regarding the key challenges of software startups.[55] Salamzadeh and Kesim added that besides the challenges mentioned above, environmental influences like existing trends or market limitations are also among the main challenges in the early stage.[56]

Expansion stage

As soon as the startup company has successfully passed the early stage, it enters the so-called expansion stage. According to the German Startup Monitor, 23.6% of the startups examined are in the expansion stage, representing the second-largest development phase.[57] During the expansion stage, the startup pursues an aggressive growth strategy, especially in its sales and number of users.[58] For the successful and stringent pursuit of this strategy, the primary tasks include massive customer acquisition, personnel recruitment, including management staff, as well as the internationalization of the company.[59] The founders have to develop themselves strongly in this phase, especially on a strategic level, to assume a leadership position that focuses for instance on

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[36]Cf. Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, pp.8f.; Kollmann (2019), p.134.

[37]Cf. Passaro et al., 2016, pp.8f.; Sammer, 2021.

[38]Cf. Salamzadeh & Kesim, 2015, p.6.

[39]For a deeper understanding regarding incubator and accelerator programs Lange and Johnston (2020, p.1563) and Cohen (2013, pp.20ff.) provide a good overview. Regarding the support of business angels, Morrissette, 2007, pp.52ff. offers more in-depth explanations for further reading.

[40]Cf. Salamzadeh and Kesim (2015, p.6).

[41]Cf. Sammer, 2021.

[42]Cf. ibid.; Passaro et al., 2016, p.9.

[43]Cf. Sammer, 2021.

[44]Cf. ibid..

[45]Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, p.9; Tech, 2014, p.3.

[46]Cf. Kollmann et al., 2020, p.21; Salamzadeh & Kesim, 2015, p.6; Passaro et al., 2016, pp.9f.; Sammer, 2021.

[47]Cf. Salamzadeh & Kesim, 2015, p.6; Sammer, 2021.

[48]Cf. ibid.; Passaro et al., 2016, p.9.

[49]Cf. Davila et al., 2015, p.209.

[50]Cf. Davila, Foster, & Gupta, 2003, p.691.

[51]Cf. ibid..

[52]Cf. Kaplan & Strömberg, 2001, p.426.

[53]Cf. Amornsiripanitch, Gompers, & Xuan, 2019, pp.539f..

[54]Cf. Giardino, Bajwa, Wang, & Abrahamsson, 2015, p.55.

[55]Cf. Wang, Edison, Bajwa, Giardino, & Abrahamsson, 2016, p.176.

[56]Cf. Salamzadeh & Kesim, 2015, p.7.

[57]Cf. Kollmann et al., 2020, p.21. The German Startup Monitor defines the expansion stage as the growth stage.

[58]Cf. ibid..

[59]Cf. Passaro et al., 2016, p.10.

employee motivation and leadership, sales growth, customer and supplier acquisition, and the search for new markets and partners.[60] During this stage, the expanding startup companies often rely on funding from venture capital organizations, which also support the startup's growth with their expertise in management decisions.[61]

As the central challenges of this phase, Greiner identifies the problems in coordination and communication, the emergence of new functionalities, the multiplication of management hierarchy levels, and the emergence of interrelated jobs as a consequence of the large employee and revenue growth.[62] Davila et al. added that "the number of interactions required to [impart information to the right employee] increases exponentially [as] the number of employees grows"[63], resulting in significant additional time and costs. This leaves limited time for the managers to make essential strategic decisions.

Later stage

In the final stage of development, the so-called later stage, the startup has become an established market player and modifies its strategy from aggressive to sustainable growth with reliable revenues.[64] According to the German Startup Monitor, 3.3% of the startups examined are in the later stage, which quantitatively represents the smallest development phase.[65] During this stage, the company structures and processes become further professionalized, the company goals redefined, and the product range further diversified.[66] The founders and investors often intend to exit from the company during this phase, regularly as part of a trade sale or an initial public offering (IPO).[67] For both parties, an exit represents a liquidity event in which they usually sell their shares profitably and pursue new challenges and opportunities.[68] At a trade sale, a strategic investor purchases the company and thus the company shares of the founders and investors, provided it strategically fits the investor's existing company to achieve cost savings, operational synergies, and generally competitive advantages.[69] The IPO is the preferred exit mechanism for highly valued companies, as the highest yields can usually be achieved in this way.[70] Here, venture capitalists and founders sell their shares on the stock market, generally over a long period.[71] The preparation and realization of the trade sale or IPO require a large

amount of capital, which investment banks typically provide in the form of short-term bridge loans.[72]

Due to the slower but sustained growth, the key challenges in the later stage do not differ from those in the expansion stage. However, further financial and structural challenges due to the trade sale or IPO arise in the later stage.

2.2. Fundamentals of management control systems

As described in the previous chapter, managers of startup companies must overcome numerous challenges during the company's growth. The failure of the management team to overcome these challenges "can lead to large financial losses, reputation[al] damage, and possibly even organizational failure."[73] Therefore, many scientists have searched for approaches to manage these challenges in the past. In this regard, so-called MCSs have proven to be particularly effective. The implementation of MCSs, such as financial planning, changes the management infrastructure of the startup company from an informal, personal management style to a formal management control (MC).[74] This control system professionalizes the startup on the one hand and supports the management in a multitude of decisions on the other hand[75], as will be explained in more detail in this chapter.

This chapter starts with a definition of the term MCS before introducing the categorization of MCSs according to Davila and Foster. Subsequently, the current state of research on MCSs in startups will be presented before deriving the necessary research needs from this.

2.2.1. Definition of management control systems

Various definitions of MCSs[76] have developed over time in the academic literature, which partly differ considerably.[77] In the following, the divergent conceptual understandings will be highlighted before introducing the authoritative definition of a MCS for this thesis.

The origins of the study of MCSs go back to the work of Robert N. Anthony in the year 1965.[78] Anthony defined MC as "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives."[79] In his conception, the MC acts as a connecting link between strategic

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[60] Cf. Passaro et al., 2016, p. 10.
[61] Cf. Kollmann (2019), p.135.
[62] Cf. Greiner, 1998, p.56.
[63] Davila & Foster, 2007, p.909.
[64] Cf. Kollmann et al., 2020, p.21; Kollmann (2019), p.137; Sammer, 2021.
[65] Cf. Kollmann et al., 2020, p.21. In this context, the later and steady stages were combined as the later stage.
[66] Cf. Kollmann (2019), p.137; Sammer, 2021.
[67] Cf. Kollmann et al., 2020, p.21; Kollmann (2019), p.137.
[68] Cf. DeTienne, 2010, p.204; Cumming & Johan, 2008, p.198.
[69] Cf. DeTienne, 2010, p.211.
[70] Cf. Cumming & MacIntosh, 2003, pp.195f..
[71] Cf. Isaksson, 2007, p.145.

[72] Cf. Kollmann (2019), p.642.
[73] Merchant and Van der Stede (2017, p.3).
[74] Cf. Davila, 2005, p.226; Davila et al., 2010, p.79.
[75] Cf. Davila & Foster, 2007, p.907; Davila et al., 2015, p.207; Davila & Foster, 2005, p.1039; Davila, 2005, p.223; Davila et al., 2010, p.98.
[76] The terms management accounting system (MAS) and MCS are often used synonymously in the literature. However, this usage can lead to misunderstandings, so a distinction between these two terms is necessary. Chenhall and Davila and Foster understand MASs as a subset of MCSs in which management accounting (MA) practices like cost accounting or budgeting are systematically applied to achieve the companies' goals. MCSs, while including MASs as previously discussed, also involve other controls like informal behavioral controls on employees. (Cf. Chenhall, 2003, p.129; Davila & Foster, 2005, p.1040.)
[77] Cf. Malmi & Brown, 2008, pp.288f..
[78] Cf. Ferreira & Otley, 2009, p.264; Langfield-Smith, 1997, p.208; Otley, 2016, p.46.
[79] Anthony (1965, p.17).

planning and operational control and thus represents one of the three processes in the organization that are more separated from each other.[80] Therefore, the MCSs "should be integrated and coordinated systems"[81] that ensure the long-term goals, plans and policies at the strategic level based on the operational control of the measurable processes.[82] Despite his pioneering approach to research on MCSs, Anthony's conception has been criticized in the literature because of two major issues. First, he was criticized for separating MC from strategic and operational control.[83] Langfield-Smith emphasizes in this context that employees from Anthony's operational and MC level are commonly involved in the planning and implementation of strategic decisions, thus this approach should be considered inappropriate.[84] Secondly, he was criticized for his strong focus on using financial and accounting-based controls, which neglect the management of employee behavior by explicit control systems.[85]

Correspondingly, many additional definitions of MCSs have been developed over the past decades. In his analysis of existing MCS definitions, Chenhall identified a broadening of the information content.[86] From definitions that include formal, financial, and accounting-based information for decision-making to definitions that additionally encompass "external information related to markets, customers, competitors, non-financial information related to production processes, predictive information and a broad array of decision support mechanisms, and informal personal and social controls."[87]

A frequently encountered definition in the literature is based on Merchant and Van der Stede, who separate strategic control from MC.[88] They define MC as influencing, directing, and aligning employees' behavior to achieve the organization's goals, consistent with its pursued strategy.[89] For this purpose, MCSs "are necessary to guard against the possibilities that people will do something the organization does not want them to do, or fail to do something they should do."[90] Thus, according to Merchant and Van der Stede, the MCS addresses, monitors and prevents the following three employee issues: lack of direction, motivational problems, and personal limitations.[91]

A lack of direction signifies that employee do not act in line with the company's goals because there is no clear communication of what the company requires of them. A further problem is the lack of motivation. In this case, although employees know what is required of them to achieve the

company's goals, they do not operate as the company requires, due to conflicting personal and organizational goals. Finally, the MCS addresses personal limitations. Although the employees are motivated and understand the company's requirements of them, they cannot perform their tasks well due to personal limitations such as a lack of experience, training, stamina, or knowledge. The MCS addresses and monitors these issues to enable the execution of the business objectives and strategy by the employees.[92]

Many other scholars agree with Merchant and Van der Stede's approach and define MCSs as the behavioral control of employees with regard to the corporate goals, mission and strategies.[93]

Otley expanded Merchant and Van der Stede's approach by understanding MCSs as an additional information base for decision-makers in the company. Accordingly, MCSs "provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behavior."[94] Robert Simons' definition, which has become firmly established in research of MCSs in startups[95], follows Otley's approach. Simons defines MCSs as "formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities."[96] His definition includes formal systems such as plans, budgets or market monitoring systems, as well as information-based procedures such as the search for new opportunities or the communication and monitoring of plans, goals, and developments across multiple hierarchical levels. These procedures should stimulate the managing of goal-oriented activities and the search for new opportunities and innovations, leading to new strategies.[97] Davila et al. interpret MCSs according to Simons' definition "as recurring and formalized sets of institutionalized protocols and routines designed to motivate, monitor, and measure the behavior of managers and employees, as well as assist them in information-gathering and decision-making."[98] In the context of this thesis, the definition and interpretation of an MCS by Simons and Davila et al. will be followed.

2.2.2. Davila and Foster's categorization of management control systems

Several designs for MCSs have been established in the literature over time. The most famous is the levers of control framework by Robert Simons, who distinguished between the belief, boundary, diagnostic, and interactive systems.[99] Since this framework plays a subordinate role in this thesis,

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[80]Cf. Anthony, 1965, p.16.
[81]Strauß and Zecher (2013, p.237).
[82]Cf. Anthony, 1965, pp.16ff..
[83]Cf. Langfield-Smith, K. (1998), p.208; Otley, 1994, p.290.
[84]Cf. Langfield-Smith, K. (1998), p.209.
[85]Cf. ibid, p.208; Merchant & Otley, 2006, p.788.
[86]Cf. Chenhall, 2003, p.129.
[87]Ibid..
[88]Cf. Merchant & Van der Stede, 2017, p.11.
[89]Cf. ibid..
[90]Ibid..
[91]Cf. Merchant & Van der Stede, 2017, pp.12ff..

[92]Cf. ibid..
[93]Cf. Hartmann, Kraus, Nilsson, Anthony, & Govindarajan, 2021, p.15; Flamholtz, Das, & Tsui, 1985, p.36; Abernethy & Chua, 1996, p.573.
[94]Otley (1999, p.364).
[95]Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.908; Davila, Foster, & Li, 2009, p.323; Davila et al., 2015, p.207; Davila, 2005, p.226; Sandino, 2007, p.265; Schachel et al., 2021, p.661; Schachel, 2019, p.19.
[96]Simons (1995, p.5).
[97]Cf. ibid..
[98]Davila et al., 2015, p.207.
[99]Cf. Simons, 1995, p.7.

the significance of the individual levers of control will not be discussed further. Davila and Foster developed the authoritative design for exploring MCSs in startup companies. They subdivide the MCSs into eight categories: financial planning, financial evaluation, human resource planning, human resource evaluation, strategic planning, product development management, sales/marketing management, and partnership management. In addition, they assigned a total of 46 individual control systems to these eight categories. Table 1 presents the eight categories with a section of the individual control systems.[100] The presented systems demonstrate that MCSs are much more than just financial and accounting-based systems, but also systems that, for instance, want to communicate the company's culture and values to the employees.

Based on this categorization, Davila and Foster investigated which control systems startups adopt first. Using a sample of 78 startup companies, they found that the financial planning category has the earliest and most widely adopted systems involving the cash flow projection, operating budget, and sales projection. Moreover, the human resource planning systems, such as core values or organization charts, and strategic planning systems, including the definition of strategic milestones or the headcount development plan, are used early and frequently as control systems in startup companies. Evaluation systems such as financial and human resource evaluation systems are integrated into the company later.[101]

2.2.3. Management control systems in startups

The implementation of MCSs in startup companies represents a controversial issue in research. The traditional belief is that the rigid and bureaucratic character of MCSs negatively influences creativity[102] and the entrepreneurial spirit of the startup and thus affects its future success.[103] Current studies have refuted this traditional view in numerous ways and have proven the importance of MCSs for the company's growth and value.[104] These studies further indicate that the growth creates new challenges that require transitioning from informal, personal management to a formal MCS.[105] Implementing these formal MCSs leads to various benefits that contribute to the startup's professionalization and development.[106] Against this background, Davila et al. identified four subsequent benefits of MCSs in startup companies as particularly important.[107] First, MCSs make the organization's objectives explicit and transparent, ensuring a

common understanding of the objectives across the organization and aligning employees' decisions to achieve them.[108] Second, MCSs facilitate the coordination of tasks as the number of employees increases, as well as the planning of next steps to achieve the organizational goals, through the introduction of coordination control systems and communication infrastructure.[109] Third, MCSs support managers in the fast and efficient acquisition of information for making the right decisions.[110] Finally, MCSs relieve managers from routine tasks due to the integration of alert systems that monitor the achievement of process targets and provide managers more time for strategic activities.[111]

Besides identifying the numerous advantages of MCSs, research has so far primarily focused on the identification of influencing variables for the introduction of MCSs and the impact of MCSs on business development, which will be presented in the following.

Influencing variables for the introduction of management control systems

Numerous studies have addressed the factors that motivate startup companies to adopt MCSs.[112] These studies have identified a variety of factors that positively influence the adoption of MCSs; for instance, the number of employees, international operations, time to revenue, presence of venture capital,[113] Chief Executive Officer (CEO) characteristics,[114] CEO turnover, or agency costs[115]. Particularly important and frequently identified factors are the company's growth, venture capital financing and CEO turnover, which will be presented in more detail in the following.

Company growth

Company growth constitutes one of the most important influencing variables for the introduction of an MCS and is measured by the number of employees.[116]

During the early stages, the communication, coordination, and control of tasks and goals typically occur frequently and through informal interactions.[117] Due to the often small number of employees in the early stage, the informal organizational structure of the company does not pose significant challenges in terms of the MC. Davila et al. suggest that managers can handle between 50 and 80 employees with their personal management style, without the support of MCSs, depending on their abilities and time capacities as well as the complexity of the company.[118] With increasing headcount,

[100]Cf. Davila & Foster, 2007, p.908.
[101]Cf. ibid., p.934.
[102]Cf. Amabile, Conti, Coon, Lazenby, & Herron, 1996, pp.1774f..
[103]Cf. Lukka & Granlund, 2003, p.13.
[104]Cf. Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.930; Davila et al., 2015, p.207; Davila et al., 2010, p.87.
[105]Cf. Davila & Foster, 2005, p.1044; Davila & Foster, 2007, p.907; Davila, 2005, p.226; Davila et al., 2010, p.86.
[106]Cf. Davila et al., 2010, pp.97ff..
[107]Cf. ibid..

[108]Cf. ibid., p.97.
[109]Cf. ibid., p.98.
[110]Cf. ibid..
[111]Cf. ibid., p.99.
[112]Cf. ibid., pp.83ff.; Davila, 2005, p.223; Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.907; Davila et al., 2009, p.322; Cassar, 2009, p.27; Zor, Linder, & Endenich, 2019, p.658.
[113]Cf. Davila & Foster, 2007, p.907.
[114]Cf. Zor et al., 2019, p.658.
[115]Cf. Davila & Foster, 2005, p.1039.
[116]Cf. Davila, 2005, p.226.
[117]Cf. ibid..
[118]Cf. Davila et al., 2010, p.86.

Table 1: Davila and Foster's MCS categorization[*]

MCS categories	Individual control systems
Financial planning	Operating budget
	Cash flow projections
	Sales projections
Financial evaluation	Capital investment approval procedures
	Product profitability analysis
	Customer profitability analysis
Human resource planning	Core values
	Mission statement
	Codes of conduct
Human resource evaluation	Written performance objectives for managers
	Individual incentive programs
Strategic planning	Definition of strategic (nonfinancial) milestones
	Investment budget
Product development management	Project milestones
Sales/ marketing management	Sales targets for salespeople
	Customer relationship management system
Partnership management	Policy for partnerships

[*]Based on Davila and Foster (2007, pp.914f.).

the interactions required to move information through the organization grow exponentially[119], resulting in high coordination and control costs.[120] The high expenditure of time for the transfer of information leads to a decrease in the efficiency of informal management as the number of employees increases since there is less time for the more essential value-creating activities.[121] In order to counter the growing costs and inefficiencies, the startup companies implement MCSs that formalize both communication, for example of company goals, and the motivation and monitoring of employees.[122]

MCSs implemented to regulate company growth are typically human resource systems.[123] These systems usually include several functions to save management time and costs, such as the formal introduction of new employees to the company, or periodically informing existing employees about current or new organizational goals with which they should act in accordance.[124] Furthermore, business processes are often formalized through action controls as part of the growth by defining expectations for the individual process, outlining staff coordination, and defining controls through rules and employee roles.[125] Finally, formal result controls are commonly implemented to provide managers with information about the results and performance of employees, for instance, to motivate employees with incentives for reaching a certain

level of goal achievement.[126]

Venture capital financing

A further significant influencing variable represents venture capital financing. Davila and Foster found an earlier and more intensive use of MCSs in venture capital-backed startups than in non-venture capital-backed startups. In this context, they identified the following three influencing factors for the earlier und more intensive use.[127]

First, venture capital organizations invest in startup companies from which they expect high growth and will thus ultimately achieve a high return on their investment. Through their investment and supporting management expertise, they facilitate the startup's rapid growth and thus the implementation of MCSs, as outlined previously. Furthermore, startup companies that require venture capital funding are typically cash flow negative in their early stages of development. Therefore, they often implement more financial planning tools to monitor financial resources and calculate financial needs in their early stages. Finally, Davila and Foster identify the direct involvement of venture capitalists as an influencing variable on the adoption of MCSs. In order to evaluate the startup's development, venture capitalists expect regular and reliable financial reports.[128] To ensure transparent and reliable information for this purpose, venture capitalists often require the implementation of financial planning, financial evaluation, and strategic planning systems at the beginning of their investment.[129]

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[119]Cf. Davila & Foster, 2007, p.909.
[120]Cf. Davila, 2005, p.226.
[121]Cf. ibid..
[122]Cf. ibid.; Davila & Foster, 2005, p.1044; Davila & Foster, 2007, p.909.
[123]Cf. Davila, 2005, p.227.
[124]Cf. ibid..
[125]Cf. ibid..

[126]Cf. ibid..
[127]Cf. Davila & Foster, 2007, pp.917-921.
[128]Cf. Granlund & Taipaleenmäki, 2005, p.43.
[129]Cf. Davila & Foster, 2007, pp.917-921.

In summary, venture capital-backed startup companies implement MCSs earlier and more frequently than startups that are not backed by venture capital. There is a particular focus on financial planning and evaluation systems due to the control of venture capitalists on results and developments, and the startup's negative cash flow.[130]

CEO rotation

The last influencing variable presented in this chapter is CEO rotation. The CEO assumes a crucial position in building and professionalizing the startup company. In the early development stage, the founders take the lead.[131] During this stage, the business processes are informally organized and "the founders [. . .] are usually technically or entrepreneurial oriented, and they generally distain management activities."[132] In order to ensure further growth as the business grows, the business structures need to be professionalized and formalized, requiring the founders to assume a manager's position.[133] Many founders are unable to make this transition: while they possess good qualities for managing the startup in its early development stage, these are not sufficient for managing a growing company that needs to be professionalized.[134] In this context, Hellmann and Puri have proven that venture capital organizations in particular frequently replace the founder(s) by an external CEO, in order to integrate formalized and professional organizational structures.[135] Davila and Foster also examined the relationship between founders' MCS intensity and CEO turnover. They found empirical evidence that founders with low MCS intensity are replaced faster and more often by an external CEO.[136] In spite of this, the founders often remain in a modified position with the company.[137]

Thus, CEO turnover represents a combination of the two previously described influencing variables, namely company growth and venture capital financing. A new CEO is linked to the adoption of MCSs for the formalization and professionalization of business processes, such as monitoring and motivation of employees on the one hand, and the introduction of financial planning and evaluation systems for a transparent reporting of the business results and developments to the venture capitalists on the other hand.[138]

Impact of management control systems on startup development

Apart from the numerous influencing variables, the impact of MCSs on the development of startup companies has also been widely investigated.[139] Empirical studies have identified, for instance, associations between the adoption of MCSs and company growth[140], sales growth[141], company value[142], performance[143], and improved forecasting of startups[144]. The following provides a more in-depth explanation of the impact of MCSs on the company's growth, its value, and the investment decision of external financiers.

Company Growth

Company growth not only represents a key influencing variable for the adoption of an MCS, but it can also be a consequence of the use of MCSs.[145]

Davila and Foster examined the impact of MCS intensity on company growth. They found "that an increase in MCS intensity facilitates future company growth."[146] Thus, business growth and MCS intensity are interlinked and positively influence each other. Admittedly, this result represents merely an association and not causality.[147] Many other factors, such as the quality of the business model or the management quality of the CEO, also impact company growth.[148]

Company Value

In addition to company growth, Davila et al. analyzed the impact of MCS intensity[149] on the company value. Based on an international sample of 66 startups, they examined the effect of MCS intensity on the startup valuation at external financiers' events. The statistical analysis of the data revealed both a statistically significant and economically positive correlation between the MCS intensity and the business valuation. The "results [. . .] suggest that a 10% increase in MCS adoption is associated with a 3.3% increase in firm value."[150] Beyond this general result, they identified further influencing factors that lead to a higher business valuation through the adoption of MCSs.[151]

On the one hand, the adoption of MCSs positively impacts the company value if the organization operates in a highly competitive environment and has high growth rates. "Intense competition forces companies [. . .] to adapt quickly to changing markets, customer preferences and technolo-

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[130]Cf. Davila & Foster, 2007, pp.917-921.
[131]Cf. Hellmann & Puri, 2002, p.181.
[132]Greiner (1998, p.60).
[133]Cf. Greiner, 1998, p.60; Hellmann & Puri, 2002, p.181; Davila & Foster, 2007, p.930; Davila, 2005, p.228.
[134]Cf. Davila, 2005, p.228.
[135]Cf. Hellmann & Puri, 2002, p.181.
[136]Cf. Davila & Foster, 2007, pp.931f..
[137]Cf. Hellmann & Puri, 2002, p.181.
[138]Cf. Davila, 2005, pp.228f..
[139]Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.930; Davila

et al., 2010, p.87; Davila et al., 2015, p.207; Sandino, 2007, p.265; Schachel et al., 2021, p.660; Schachel, 2019, p.129; Wijewardena, De Zoysa, Fonseka, & Perera, 2004, p.216; Cassar & Gibson, 2008, p.732.
[140]Cf. Davila & Foster, 2005, p.1040; Davila & Foster, 2007, p.930; Davila et al., 2010, p.87.
[141]Cf. Wijewardena et al., 2004, p.216; Davila & Foster, 2005, p.1040.
[142]Cf. Davila et al., 2015, p.207.
[143]Cf. Sandino, 2007, p.265.
[144]Cf. Cassar & Gibson, 2008, p.732.
[145]Cf. Davila & Foster, 2007, p.930; Davila & Foster, 2005, p.1040; Davila et al., 2010, p.87. Davila and Foster calculated the MCS intensity in a two-stage process. "First [they] compute the MCS category intensity as the percentage of individual systems adopted in each of the eight categories for each year. Then overall systems' intensity is calculated as the equal-weighted sum of the eight intensities." (Davila & Foster, 2007, pp.921f.).
[146]Davila & Foster, 2007, p.930.
[147]Cf. ibid..
[148]Cf. Davila et al., 2010, p.86.
[149]Davila et al. measure the MCS intensity "as the number of systems adopted at year-end immediately prior to the financing round." (Davila et al., 2015, p.207).
[150]Ibid., p.209.
[151]Cf. ibid., pp.209-213.

gies"[152] to maintain their market position. Moreover, as described in chapter 2.2.3.1, high growth rates create an exponentially increasing demand for communication to transport information along the company, which formal control systems can handle.[153] Managers thus have more time for the essential, strategic decisions of the company. External financiers evaluate these systems as indispensable for companies, resulting in the higher valuation of companies with MCSs in place.[154]

On the other hand, aligning MCSs with the business strategy also positively affects a company's valuation. The literature distinguishes between the cost leadership and the differentiation strategy.[155] In a cost leadership strategy, the company aims to be the cheapest provider on the market and therefore focuses on cost and quality controls. A differentiation strategy offers a unique product or service to the market, which is characterized, for example, by an improved design or extended distribution channels. This strategy focuses on revenue controls and thus on the marketing and sales productivity of the product or service.[156] Sandino proved in her study that a good alignment of the MCS and the business strategy is associated with improved performance.[157] In this context, Davila et al. have also verified that a good alignment is associated with a higher company valuation by the external financiers.[158]

External financiers' investment decision

The impact of MCSs on external financiers has also been analyzed extensively in the past. Particular attention has been paid to the impact of MCSs on the investment decision of external financiers.[159]

Access to equity providers, such as venture capitalists, or debt financiers, such as banks, represents an essential financial resource for startups to mature into growing, successful, and professional companies.[160] However, access to external funding relates to several criteria that must evaluated by the financiers, such as the management team, profitability of the business model, market, competitors, or the prospects of success.[161] The limited revenue and profit history of the startup companies, the negative cash flows[162] and the information advantage of the founders about the performance, potential, risk and the true value of their startup, as well as about their own capabilities[163], lead to information asymmetries between the startup and the financiers, which significantly influence the investment decision of the latter. By introducing MCSs, startups can reduce information asymmetries and

simultaneously convey a positive signal about their growth and professionalization to the financiers.[164] The financiers of the startups "believe [that] formal MCSs lead to better decisions or that they signal firm quality and future growth potential."[165] Accordingly, Schachel provided evidence in the context of her dissertation that the adoption of MCSs has a significant, positive influence on the investment decision of financiers.[166] Schachel et al. also prove that already introduced MCSs are more important for the investment decision of debt financiers than that of equity financiers. Since debt financiers have fewer control rights and are less involved in the management process than equity financiers, they tend to prioritize MCSs in their investment decisions more. In this regard, debt financiers prioritize long-term financial planning systems for the startup's survival to ensure financial security and stability. In contrast, for equity investors, MCSs are less important for their investment decisions since they have more control rights and are involved in the management process, making the adoption of MCSs immediately after the funding more important for them. They also focus on the introduction of financial MCSs first.[167]

2.2.4. Summary of the current state of research

Previous studies have revealed that MCSs are a suitable and necessary instrument for a startup's professionalization and expansion process. The focus of studies on MCSs in startups has so far been centered on different influencing variables and impacts of MCSs. Thus, the qualitative implementation of these systems in startups was not considered in greater detail. This thesis addresses this research gap and examines the implementation of financial planning and cost accounting instruments in startups, depending on their development stages. As described in chapter 2.2.2, financial planning is the MCS category, which is adopted earliest and most widely in startups,[168] and will be analyzed in greater detail with regard to its implementation. In contrast, Granlund and Taipaleenmäki showed that cost accounting, as a central MAS and thus a subset of MCSs, belongs to the less preferred tasks in new economy firms and receives less attention during the company's growth.[169] Thus, cost accounting differs from financial planning in terms of its attention in startup companies. However, the qualitative implementation of cost accounting across different startup development stages will be analyzed in greater depth in this thesis.

2.3. Fundamentals of financial planning

This thesis first focuses on the implementation of financial planning, as the central MCS, in startup companies. Financial planning is defined as "the process of goal-oriented,

[152]Davila et al., 2015, p.212.
[153]Cf. Davila & Foster, 2007, p.909.
[154]Cf. Davila et al., 2015, pp.209-213.
[155]Cf. Sandino, 2007, p.267.
[156]Cf. ibid., pp.267f..
[157]Cf. ibid., p.265.
[158]Cf. Davila et al., 2015, pp.209-213.
[159]Cf. ibid, p.208; Schachel et al., 2021, p.661; Schachel, 2019, pp.100f..
[160]Cf. Drover et al., 2017, p.1821.
[161]Cf. Kaplan & Strömberg, 2004, pp.2185-2189.
[162]Cf. Davila et al., 2015, p.209.
[163]Cf. Schachel et al., 2021, p.661.

[164]Cf. Schachel et al., 2021, p.661; Schachel, 2019, p.114; Davila et al., 2015, p.209.
[165]Davila et al., 2015, p.236.
[166]Cf. Schachel, 2019, p.129.
[167]Cf. Schachel et al., 2021, pp.676ff..
[168]Cf. Davila & Foster, 2007, p.908.
[169]Cf. Granlund & Taipaleenmäki, 2005, p.34.

i.e., aligned with defined liquidity, profitability and risk targets, shaping of future financial decisions."[170] In order to provide a fundamental understanding of the implementation of financial planning in companies, the essential tasks of financial planning are initially outlined before the long-term and short-term financial planning are presented.

2.3.1. Tasks of financial planning

The key objective of financial planning is to permanently secure the company's solvency.[171] Achieving this goal requires a variety of tasks that financial planning must fulfill, of which the most important are outlined below:

- Planning of short and long-term capital requirements[172],

- Planning of short and long-term capital cover[173],

- Planning of cash inflows and outflows and securing liquidity[174],

- Early detection of capital deficits or surpluses[175],

- Planning and evaluation of appropriate countermeasures when identifying capital deficits or surpluses[176],

- Planning of the financial goals and the development of the company[177] and

- Creation of transparency regarding the company's planned development towards employees[178] and financiers[179].

In addition to the core tasks of financial planning listed above, there are many other essential tasks whose complete enumeration would go beyond the scope of this thesis. Nevertheless, the aforementioned tasks demonstrate the importance of financial planning in ensuring the company's survival and therefore provide a further reason why financial planning is introduced so frequently and early in startup companies.

2.3.2. Terms of financial planning

Financial planning distinguishes between long-term and short-term planning. These plans should not be considered as isolated but rather coordinated with each other.[180] Thus, long-term financial planning, for instance, forms the strategic framework on which detailed short-term planning is oriented

for financial decisions.[181] In the following, long-term and short-term financial planning are presented in more detail.

Long-term financial planning

Long-term financial planning, often defined as strategic financial planning[182], encompasses a planning horizon of three to five years.[183] It sets the company's main financial targets and provides the framework for short-term financial planning.[184] Long-term financial planning forecasts both the annual capital requirements and the capital coverage of the organization based on the company's strategic direction.[185]

Several sub-plans are necessary to forecast these two plans as illustrated in Figure 1. A regularly chosen starting point for the preparation of the financial planning represents the revenue planning.[186] Various information can be considered to increase the revenue forecast accuracy, such as macroeconomic growth, industry growth, competitors, marketing efforts or customer behavior.[187] Based on this information, the revenue and thus also the sales volume can be forecast for the planning periods with the aid of assumptions. The sales volume allows a calculation of the costs of the products, on the one hand, consisting of labor, material, or overhead costs. On the other hand, the sales volume allows forecasting the investment requirements in non-current assets since an increased sales volume might require additional production facilities to fulfill the necessary capacity volume. On this basis, further costs for administration, distribution, research and development and other costs can be calculated. Additionally, depreciation can be planned and added to the production costs after completing the investment plan. The costs incurred are summarized under the capital requirement, which considers the requirements in non-current assets (machinery, etc.) and current assets (raw materials and supplies, etc.).[188]

Revenues and expenses do not immediately lead to cash flows, as invoices are paid at a later stage. Therefore, the cash inflows and outflows must be forecast at the correct periods to plan the receivables and payables on this basis. Companies often have to pay their debts to suppliers sooner than they obtain the receivable from the customer. The capital cover planning ensures the financing of the capital requirements and thus the company's long-term survival. The planning involves evaluating various financing alternatives according to the cost of capital and the long-term supply security.[189] After completing the financing, the interest expense can be calcu-

[170]Breuer (2021).

[171]Cf. Becker & Peppmeier, 2018, p.28.

[172]Cf. ibid., p.30; Perridon, Steiner, & Rathgeber, 2017, p.727.

[173]Cf. ibid..

[174]Cf. Wöhe, Döring, & Gerrit, 2020, p.528; Becker & Peppmeier, 2018, p.29; Perridon et al., 2017, p.727.

[175]Cf. ibid..

[176]Cf. Wöhe et al., 2020, p.522.

[177]Cf. Mensch, 2008, p.30.

[178]Cf. Merchant & Van der Stede, 2017, p.297.

[179]Cf. Schachel et al., 2021, p.661.

[180]Cf. Uskova & Schuster, 2020, p.11.

[181]Cf. Mensch, 2008, p.30.

[182]Cf. Uskova & Schuster, 2020, p.11.

[183]Cf. Merchant & Van der Stede, 2017, p.299; Wöhe et al., 2020, p.527; Mensch, 2008, p.31.

[184]Cf. Mensch, 2008, p.30.

[185]Cf. Becker & Peppmeier, 2018, p.30.

[186]Cf. Perridon et al., 2017, p.748.

[187]Cf. ibid..

[188]Cf. Gansel, 2005, p.3.

[189]Cf. Wöhe et al., 2020, p.527.
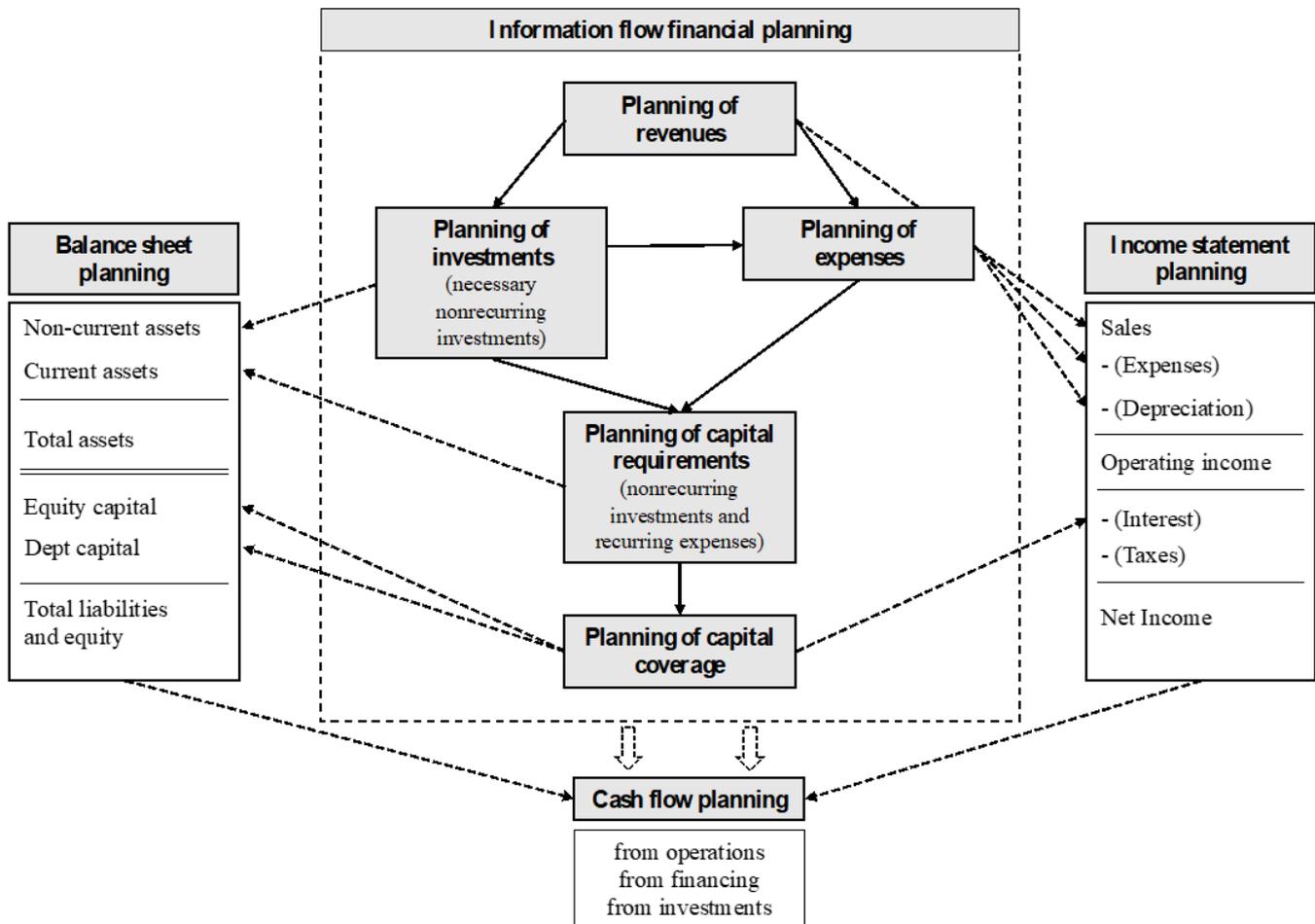
Figure 1: Information flow financial planning*

*Based on Gansel (2005), p.7.

lated for the subsequent income statement.[190]

Therefore, long-term financial planning focuses on asset and capital planning and represents a balance sheet-based approach.[191] The information gained from capital requirement and capital cover planning is thus presented in budgeted balance sheets and income statements.[192] Figure 1 illustrates the previously described information flow. This figure also shows the cash flow planning, which is particularly important for short-term financial planning. Long-term financial planning hence provides indications about the structural and long-term equilibrium of the company with regard to its balance sheet.[193]

The advantage of long-term financial planning lies in the early identification of problems and the company's broad scope to react to these.[194] Nevertheless, the forecasts for

long-term plans are subject to a higher degree of uncertainty.[195] According to Granlund and Taipaleenmäki, long-term financial planning is among the tools that receive little attention in new economy firms.[196]

Short-term financial planning

Short-term financial planning, often defined as operational financial planning[197], comprises a planning horizon of a maximum of one year.[198] It represents an important instrument for startups, as many startups fail due to liquidity gaps, particularly in their early stage, and thus cannot fulfil their payment obligations.[199] Short-term financial planning counteracts this issue and serves to secure the liquidity of

[190]Cf. Gansel, 2005, p.4.
[191]Cf. Becker & Peppmeier, 2018, p.31.
[192]Cf. Gansel, 2005, p.4.
[193]Cf. Uskova & Schuster, 2020, p.11.
[194]Cf. ibid..

[195]Cf. ibid..
[196]Cf. Granlund & Taipaleenmäki, 2005, p.34.
[197]Cf. Uskova & Schuster, 2020, p.13.
[198]Cf. Merchant & Van der Stede, 2017, p.300; Becker & Peppmeier, 2018, p.29; Wöhe et al., 2020, p.528.
[199]Cf. Schinnerl, 2018, p.153; Hahn, 2018, p.25.

companies.[200] Thereby, all future cash inflows and outflows of the company are forecast on a daily, weekly, monthly or quarterly basis in a so-called cash flow forecast.[201] The necessary information for planning the cash inflows and outflows are obtained from the balance sheet and income statement on the one hand and from the capital requirement and capital cover planning on the other hand, as shown in Figure 1. Consequently, short-term financial planning follows the same scheme as long-term planning, but with a special focus on the planning of revenues and costs in line with the period to ensure the correct presentation of the cash flow.[202] These forecasts are very reliable as the plans can be adapted well to the current business situation due to their short-term nature.[203] The comparison of cash inflows and outflows and the additional consideration of the cash opening balance enables liquidity surpluses and deficits to be identified.[204]

Table 2 illustrates the structure of a cash flow forecast, which comprises the cash flow from operations, financing, and investments. The addition of these three cash flows results in the total cash flow, which by adding the opening cash balance results in the ending cash balance. The ending cash balance provides information about the liquidity status of the company in the planning period. A negative ending cash balance indicates a liquidity deficit (as in time interval 2 in Table 2), which must be counteracted with appropriate measures, such as cancelling planned investments or capital contributions to ensure the company's survival.[205] Even if a liquidity surplus is identified (as in time interval 1), countermeasures, such as capital repayments or additional financial investments, should be taken to use the surplus profitably.[206] Therefore, short-term financial planning recognizes impending liquidity shortages and assumes an early warning function that provides the company with a time advantage to initiate countermeasures.[207] However, the scope of action is limited due to the short-term nature of this financial planning.[208]

The principle of a rolling plan is commonly used for short-term financial planning, in which the planning over twelve months is divided into four decades, for example, with detailed planning for the first three months and rough planning for the remaining nine months. After the end of the first decade, a detailed three-month plan is prepared for the second decade while the remaining decades are roughly reviewed and adjusted if necessary. The planning horizon is extended by another decade, so that planning in this example would always run for one year.[209]

2.4. Fundamentals of cost accounting

Apart from financial planning, this thesis focuses on cost accounting as a central MAS and thus a subset of MCSs. Cost accounting is defined as a "central subarea of the internal accounting system in which costs are recorded [...], stored, allocated to the various reference variables (e.g., products) and evaluated [...] for special purposes."[210] This chapter initially presents the cost accounting tasks before introducing the full and partial cost accounting. This provides a fundamental basis for the later analysis of the implementation of cost accounting in startup companies.

2.4.1. Tasks of cost accounting

Cost accounting primarily comprises three major tasks: planning, control, and documentation.[211] These three tasks are subject to numerous subtasks, of which some are outlined below.

Cost accounting provides a decisive support function with its information input in the planning of future-based and economic decisions of the company, especially in the areas of sales, procurement, and production.[212] These include planning decisions such as:

- Determination of the optimal order quantity,
- Determination of the upper price limit in procurement,
- Determination of the optimal production program,
- Decision about make or buy,
- Determination of the lower price limit of the product.[213]

Besides its planning function, cost accounting provides essential information about the current processes and conditions of the company and thus a reference point for controlling and steering the achievement of objectives. These include target-performance comparisons about predefined targets to monitor the efficiency of the performance process, and business unit comparisons with target values to analyze the results of the individual business units. If deviations between target and current values are identified, countermeasures can be initiated immediately. Simultaneously, the control information can act as the foundation for a result-based compensation system and thus align the employees' behavior with the company's goals.[214]

The documentation tasks of cost accounting result from commercial and tax regulations. For this purpose, companies must document the determination of production costs for the activation of internal activities and inventory changes or the determination of group transfer prices. Furthermore, cost accounting possesses a documentation task in the determination of the cost of sales for public orders.[215]

[200]Cf. Wöhe et al., 2020, p.528.
[201]Cf. Becker & Peppmeier, 2018, p.29.
[202]Cf. Wöhe et al., 2020, p.525.
[203]Cf. Uskova & Schuster, 2020, p.13; Mensch, 2008, p.33.
[204]Cf. Becker & Peppmeier, 2018, p.30.
[205]Cf. Wöhe et al., 2020, p.524.
[206]Cf. ibid..
[207]Cf. Uskova & Schuster, 2020, p.14.
[208]Cf. ibid..
[209]Cf. Uskova & Schuster, 2020, p.15.

[210]Weber (2021).
[211]Cf. Coenenberg, Fischer, & Günther, 2016, pp.23f..
[212]Cf. ibid., p.23.
[213]Cf. ibid..
[214]Cf. Coenenberg et al., 2016, pp.23f..
[215]Cf. ibid., p.24.

Table 2: Example cash flow forecast*

	Time interval	1	2	3
	Cash flow from operations			
	Incoming payments from customers	600	450	750
−	Salaries and wages	200	200	200
−	Raw materials and supplies	200	300	200
−	Taxes	50	50	50
=	**Total cash flow from operations**	**150**	**-100**	**300**
	Cash flow from financing			
	New loans	1000	0	400
−	Repayment of loans	50	100	100
−	Payment of dividends	100	0	0
(+/−)	Interest	2	2	2
(+/−)	Other financing items	0	0	0
=	**Total cash flow from financing**	**848**	**-102**	**298**
	Cash flow from investments			
	Sales of tangible assets	0	0	100
+	Sales of intangible assets	0	0	0
−	Investments in tangible assets	350	600	0
+	Investments in intangible assets	100	150	0
=	**Total cash flow from investment**	**-450**	**-750**	**100**
=	**Total cash flow**	**548**	**-952**	**698**
+	Opening cash balance	100	648	-304
=	**Ending cash balance**	**648**	**-304**	**394**

*Based on Perridon et al. (2017, pp.756f.).

2.4.2. Cost accounting systems

Since the versatile tasks of cost accounting have distinct requirements, different cost accounting systems were developed, which refer on the one hand to the temporal reference and on the other hand to the extent of the allocated costs. Figure 2 presents the different cost accounting systems according to the previous distinction. In regard to the time reference, a distinction was made between actual cost accounting, normal cost accounting and standard cost accounting. Actual cost accounting allocates costs already incurred in the current accounting period and thus provides information about the current actual status of the costs. Normal cost accounting considers the average costs of several past accounting periods to normalize fluctuating variables and improve the comparability of cost information. Standard cost accounting plans future cost positions and thus establishes comparative figures for cost control. On the other hand, cost accounting is carried out according to the scope of the costs included. For this purpose, a distinction is made between full and partial cost accounting, which will be described below.[216]

Full cost accounting

Full cost accounting considers all incurred costs and allocates them to so-called cost objects (such as products). The transfer of costs to cost objects is a phased process, consisting of cost element-, cost center- and cost object accounting. However, these three components of full cost accounting are presented below, without going into more detail on exact calculations.[217]

In the first step, the so-called cost element accounting, the question of which costs in which amount are incurred is investigated. Companies usually obtain the necessary data regarding the accrued costs from their financial accounting. The identified costs are classified into cost elements, where the level of detail is associated with a high recording effort and therefore should be carried out according to the principle of economic efficiency. For instance, costs could be classified by production factors (personnel, material, or operating equipment costs) or function areas (procurement, production, or administrative costs).[218] At the end of cost element

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[216]Cf. Coenenberg et al., 2016, pp.72f..

[217]Cf. ibid., p.70. For deeper insights into full cost accounting, see Coenenberg et al. (2016).
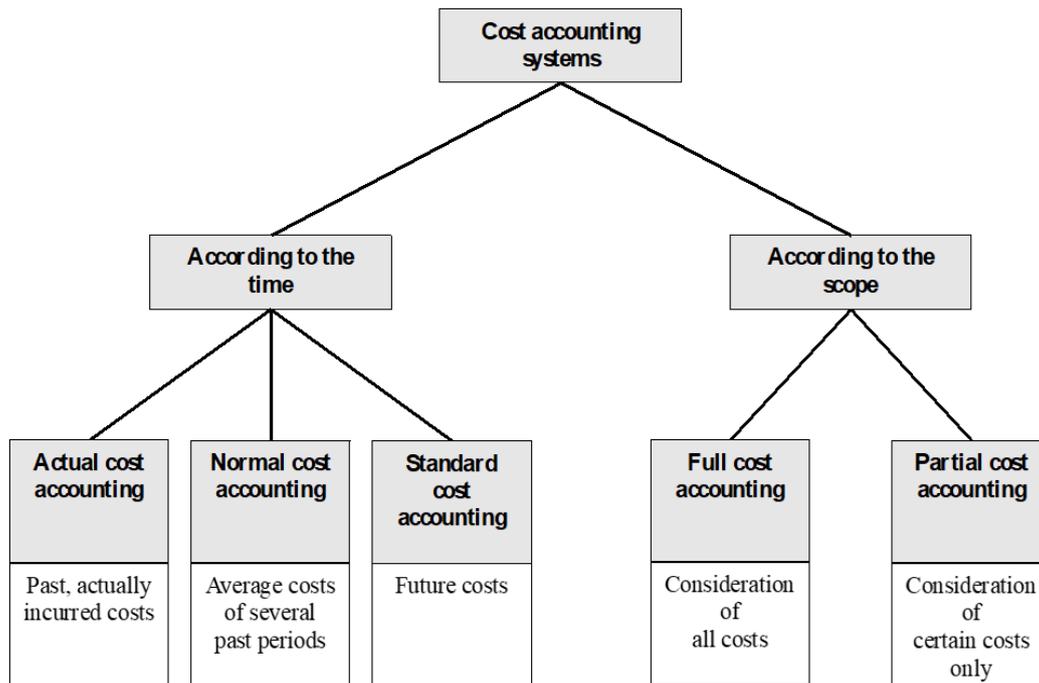[218]Cf. ibid., pp.74f..

Figure 2: Cost accounting systems*

*Based on Coenenberg et al., 2016, p.73.

accounting, the classified costs are further differentiated into direct and overhead costs to identify those costs that can be assigned to a cost object directly and causation based.[219]

In the next step, cost center accounting, the question of where the costs are incurred is investigated. In this process, the costs that cannot be directly allocated to a product (overhead costs) are assigned to the cost centers in which they are incurred. Such cost centers can be, for instance, company divisions such as production, administration, sales and warehousing, or individual company locations.[220] Here, the overhead costs, such as total power consumption, are distributed to the individual cost centers according to their cause. This allocation of overhead costs is carried out within the framework of internal cost allocation with the help of an operational accounting sheet. Calculation rates are created at the end of cost center accounting, so that the overhead costs can be allocated to the cost objects in the next step.[221]

In the last step, cost object accounting, the questions of which costs are incurred for and in what amount are investigated. For this purpose, the direct and the overhead cost, in terms of the overhead calculation rates, of the cost object are added using a calculation method such as surcharge or division calculation.[222] Thus, the manufacturing costs or costs of sales of the individual cost object are determined. By comparing the revenues and the costs of sales of the product,

the company's profitability can be checked. Furthermore, the incurred cost of the cost object can be calculated per period (week, month, quarter, or year) to obtain a short or long-term overview of costs and cost-saving potential of the object.[223]

Partial cost accounting

Partial cost accounting differs from full cost accounting in the scope of cost allocation since only a part of the costs incurred is allocated to the cost objects. The basic procedure of partial cost accounting is identical to full cost accounting, except that only variable costs are usually considered in the cost allocation. Variable costs depend on employment and only occur when something is produced (for example, raw material costs).[224] In contrast, fixed costs are independent of the employment level and always occur at a constant level (e.g., rent).[225] Thus, partial cost accounting can depict the short-term effects of changes in the employment level on the costs, due to the exclusive consideration of variable costs. It is therefore an essential source for short-term decisions, for example, about an additional order. The two main instruments of partial cost accounting are contribution margin accounting and break-even analysis, the basic concept of which is outlined in the following.[226]

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[219]Cf. Coenenberg et al., 2016, pp.69f..
[220]Cf. ibid., pp.120f..
[221]Cf. Coenenberg et al., 2016, pp.70f..
[222]Cf. ibid., p.139.

[223]Cf. ibid., p.71.
[224]Cf. ibid., p.78.
[225]Cf. ibid., p.77.
[226]Cf. ibid., pp.207f..

Table 3: Contribution margin accounting*

	Contribution margin accounting	
	Revenues	
—	Variable costs	
=	**Contribution margin**	
—	Fixed costs	
=	**Operational result**	

*Based on Coenenberg et al., 2016, p.217.
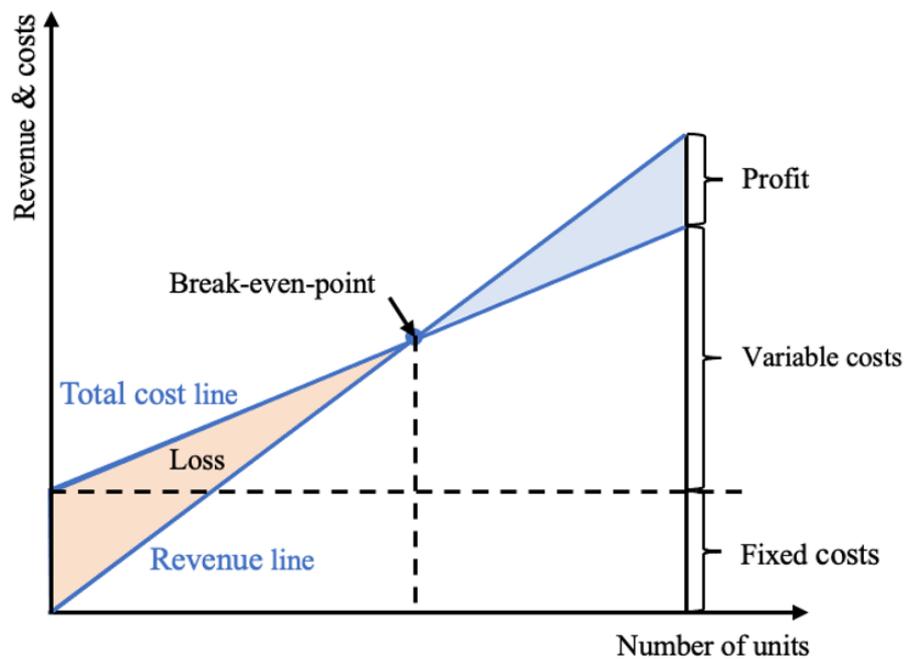
Figure 3: Break-even analysis*

*Based on Coenenberg et al., 2016, p.329.

Contribution margin accounting considers the exclusive decision relevance of variable costs assuming constant short-term capacities. Thereby, only the variable costs are initially deducted from the sales revenues, as illustrated in Table 3. This calculation results in the contribution margin, which can be interpreted as an intermediate variable with enormous importance for pricing policy decisions. The contribution margin indicates the proportion of sales revenue available for covering fixed costs that have not been considered yet. As shown in Table 3, the fixed costs are deducted in the next step to calculate the operational result.[227]

If the contribution margin is negative, the variable costs exceed the sales revenue, and thus the manufacturing of the product is not profitable since each unit produced incurs additional variable costs that are not covered. However, if the contribution margin is positive, the sales revenues exceed the variable costs, and each additional unit produced finances a further part of the fixed costs. Thus, the acceptance of an additional order would be profitable. Therefore, contribution margin accounting can identify the advantageousness of manufacturing a product through the exclusive consideration of variable costs in contrast to full cost accounting.[228]

The break-even analysis represents a further important instrument of partial cost accounting. It provides an overview of revenues, costs, profits, and losses for alternative degrees of employment and thus represents an important basis for measures to increase the profitability of the company's products.[229]

The break-even analysis is usually illustrated with the revenue-total cost model (Figure 3). The break-even point is at the intersection of the revenue line and the total cost

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[227]Cf. Coenenberg et al., 2016, p.208.

[228]Cf. ibid., p.213.
[229]Cf. ibid., pp.325f..

line (fixed cost + variable costs). It symbolizes the amount at which revenue covers total costs, resulting in neither profit nor loss. Once the revenue line exceeds the cost line (area to the right of the break-even point), the product generates a profit. The break-even analysis can be used, for instance, to illustrate the effects of price fluctuations, changes in variables costs or fixed costs on the break-even-point of the product, allowing the company to take measures to increase the profitability on this basis.[230]

2.5. Summary

As described in the previous chapters, MCSs represent suitable and necessary systems for the expansion and professionalization of startup companies.[231] Such systems not only contribute to the control of operational processes[232] but also to the planning of the business development[233], the improvement of the internal communication[234], the optimization of the task coordination[235] and provide more transparency for stakeholders[236]. Previous studies have focused on various influencing factors for the application of MCSs and the impact of MCSs on the development of startups. The qualitative implementation of these systems in startups was not considered. This thesis addresses this research gap and investigates the question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages. Thus, the investigation of this research question tackles the scarcely explored link between the influencing factors and impact of MCSs in startups. At the same time, it deals with the implementation of MCSs, using the example of financial planning and cost accounting, across the different development stages. Finally, the examination of this research question also aims to identify different development steps and influencing factors in the implementation of financial planning and cost accounting between the development stages. This research question will be investigated in more detail in the following chapters.

3. Methodology

3.1. Research approach

In order to investigate the research question - namely how financial planning and cost accounting instruments are implemented in startups, depending on their development stages - a qualitative research approach was chosen in terms of a field study. A field study, i.e., an investigation where "the researcher spends considerable time in the field that is studied and use[s] the knowledge gained as data"[237], was used for three main reasons. First, the research question was designed for a qualitative field study. Field studies address questions about "how" or "why" and thus investigate, for example, how something was implemented in the investigated field and why it was implemented in that way.[238] Accordingly, field studies aim to gain a deeper understanding of the research subject and investigate corresponding explanations and causalities.[239] Considering the research question of how financial planning and cost accounting instruments are implemented in startup companies, the aims of a field study align with those of the research question. The second reason for adopting a field study approach is that through the qualitative data obtained from a field study, an initial understanding about a topic or problem that has been little or not explored before can be developed.[240] Given the research focus on MCSs in startups on the influencing factors for the adoption and impact on the business development of these systems, the investigation of the implementation of MCSs, using the example of financial planning and cost accounting, in startups, represents a still under-researched area, where valuable information can be gained through a field study. Finally, data collection in a natural environment is a further reason for using a field study. Given the focus of this thesis on startups, data collection in an immediate startup environment provided an important basis for a deeper understanding and insight into the research question.[241]

3.2. Data collection and sample

As part of the chosen qualitative research approach in terms of a field study, semi-structured interviews were conducted with finance/accounting executives from startups. Semi-structured interviews are particularly suitable for investigating still unexplored issues, as their open-ended questions allow the interviewees maximum leeway, while also enabling the interviewer to ask more in-depth questions about interesting or misunderstood aspects.[242] Semi-structured interviews are therefore an appropriate tool for developing deeper insights and a profound understanding of the startup-specific implementation of financial planning and cost accounting instruments. Furthermore, the finance/accounting executives in the startups had exclusive knowledge about the implementation of financial planning and cost accounting in their startups and were therefore appropriate interview partners for the investigation of the research question.

For conducting the interviews, a semi-structured guide was prepared. This guide was composed of four rubrics and included both open-ended and follow-up questions. The first rubric asked about the interviewees' professional background and their experience in financial planning and cost

[230]Cf. Coenenberg et al., 2016, p.327.
[231]Cf. Davila & Foster, 2005, p.1039; Davila & Foster, 2007, p.907; Davila et al., 2015, p.207; Davila, 2005, p.223; Davila et al., 2010, p.98.
[232]Cf. Davila et al., 2010, p.99.
[233]Cf. ibid..
[234]Cf. ibid., p.97.
[235]Cf. ibid., p.98.
[236]Cf. Schachel et al., 2021, p.661; Schachel, 2019, p.114; Davila et al., 2015, p.209.

[237]Aspers and Corte (2019, p.148).
[238]Cf. Yin, 2009, p.9; Miles et al., 2014, p.11.
[239]Cf. ibid..
[240]Cf. Miles et al., 2014, p.12; Aspers & Corte, 2019, p.151; Doz, 2011, p.584.
[241]Cf. Miles et al., 2014, p.11; Aspers & Corte, 2019, p.152.
[242]Cf. Adams, 2015, pp.493f..

accounting. The subsequent category requested structural information regarding the number of employees, development stage and venture capital funding of the startup. The final two rubrics included questions regarding the implementation of financial planning and cost accounting in the respective startup. Among other things, questions were asked about the reasons for the implementation, the implementation itself, the development steps of the implementation, the influence of capital providers on the implementation, and the challenges of financial planning and cost accounting. The complete interview guide can be found in Appendix A. The interviews with the executives of the startups were conducted by video call and recorded via voice memo. Before starting the recording of the interviews, consent for the recording was requested, and the anonymization of the final transcript was agreed upon with the interview partners.

The selection of the interview partners was based on a total of five criteria, listed below:

1) The startup criteria according to the definition of a startup must be fulfilled:
    a) The company had to be younger than ten years,
    b) growth-oriented in terms of its employees/ sales,
    c) (highly) innovative in terms of its products/ services, business models and/ or technologies,
    d) and operated in the digital industry.[243]
2) The startup was based in Berlin.[244]
3) Each startup development stage (early, expansion and later stage) could be assigned to at least two startups.
4) The selected startups were from at least two different industries, and each industry examined must be associated with at least two startups.
5) The selected startups were of different sizes and ages.

These criteria were primarily applied to ensure the inclusion of startups from different development stages in the data collection. Furthermore, additional criteria on industry, size, and age of the startups were included to secure a heterogeneous selection of interview partners. These criteria were intended to provide further insights into industry, size or age-dependent differences in the implementation of financial planning and cost accounting instruments.

Based on the previously presented interview partner selection criteria, it was decided to conduct interviews with Berlin-based startups from the e-commerce and Platform as a Service (PaaS) or Software as a Service (SaaS) industries. According to the German Startup Monitor, the fields of e-commerce, PaaS and SaaS represent the digital business models of the majority of German startups, comprising 54.1%

of all 1,853 startups examined.[245] The decision to focus on these industries was in line with the criteria of the digital industry (according to the definition of a startup) and the consideration of different industries. A total of 9.7% of the startups surveyed are located in the field of e-commerce, i.e., online trading of products, according to the German Startup Monitor.[246] The PaaS and SaaS sectors are summarized in the context of this thesis as service models from the cloud computing area. Cloud computing is defined as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."[247] The PaaS and SaaS sectors included respectively 17.7% and 26.7% of the startups surveyed in the German Startup Monitor and thus represent a total of 44.4%.[248]

For this thesis, a total of 52 startups and one external expert were contacted by phone and email to request an interview. Overall, ten of the contacted startups were gained as interview partners. Furthermore, the external expert agreed to an interview, resulting in a total of eleven interviews. According to Hennink et al., qualitative research reaches code saturation at nine interviews during data analysis.[249] Based on this finding, the sample appeared to be adequate. Table 4 summarizes the interview partners with whom semi-structured interviews were conducted between June 2021 and August 2021.

As illustrated in Table 4, interviews were conducted with five startups from the e-commerce sector, five startups from the PaaS/SaaS sector, and one external expert. The interviews were conducted in the native language of the interviewees to enable an optimal output. A total of ten interviews were conducted in German and one in English (PaaS/SaaS-4). The average duration of the interviews was 43 minutes. The size of the startups interviewed ranged from two employees to more than 10,000 employees and thus fulfilled the criterion of considering different startup sizes. In both industries examined, interviews were conducted with startups from the early and expansion stages. Thereby, more interviews were conducted with startups from the expansion stage (five startups) than from the early stage (three startups). All early-stage startups were already founded and in the first stage. In contrast to the early stage, there were more significant differences between the startups in the expansion stage, especially regarding the number of employees. While some had just made the transition from the early stage to the expansion stage and were thus still at the beginning of the growth process, others were already in the middle of the expansion stage and could record rapid employee growth. From the later stage, two interviews were con-

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[243]Cf. Kollmann et al., 2020, p.14; Skala, 2019, p.21.
[244]Berlin is considered to be the hotspot for startups in Germany (cf. Kollmann et al., 2020, p.22). Due to the good distribution between large and small respectively young and old startups, the location Berlin was chosen for the startup search. Naturally, the findings can be applied throughout Germany or Europe because of the heterogeneous selection of startups and the similar market conditions.

[245]Cf. Kollmann et al., 2020, p.24.
[246]Cf. ibid..
[247]Mell and Grance (2011, p.2).
[248]Cf. Kollmann et al., 2020, p.24.
[249]Cf. Hennink, Kaiser, & Marconi, 2017, p.591.

Table 4: Description of sample[a]

Startup No.	Indus- try	Development stage	Founding	FTE[b]	Target group	VC[c] funding	Position of respondent	Duration of interview (min)
EComm-1	E-Commerce	Later stage	2008	>500	B2B2C[d]	Yes	Director Finance	61
EComm-2		Later stage	2012	>500	B2B2C	Yes	VP[e] Accounting	44
EComm-3		Expansion stage	2016	101-250	B2C[f]	Yes	CFO[g]	45
EComm-4		Expansion stage	2018	11-50	B2B[h]	No	Founder/CEO	37
EComm-5		Early stage	2013	11-50	B2C	No	Founder/CEO	34
PaaS/SaaS-1	PaaS/SaaS	Expansion stage	2016	101-250	B2B	Yes	Head of Finance	48
PaaS/SaaS-2		Expansion stage	2017	11-50	B2B	Yes	Co-founder/COO[i]	25
PaaS/SaaS-3		Expansion stage	2019	1-10	B2B	Yes	Co-founder/CFO	66
PaaS/SaaS-4		Early stage	2021	11-50	B2B	Yes	Controlling Lead	23
PaaS/SaaS-5		Early stage	2019	1-10	B2B	No	Co-founder/CEO	51
Exp	Expert	/	/	/	/	/	Director Transaction	34

[a]Own illustration.
[b]Full Time Equivalent.
[c]Venture Capital.
[d]Business-to-Business-to-Consumer.
[e]Vice President.
[f]Business-to-Consumer.
[g]Chief Financial Officer.
[h]Business-to-Business.
[i]Chief Operating Officer.

ducted with startups from the e-commerce sector. However, these startups had already expanded their business model during growth, adding a PaaS/SaaS business model to the e-commerce business model and thus ultimately covering both industries examined. Furthermore, both startups from the later stage had already completed their IPO. It should be noted that EComm-1 fell outside the startup definition since it had already exceeded the age of ten years - but it had not long exceeded the age limit set out in the definition. Thus, EComm-1 was considered in the sample as a source of potentially valuable information about financial planning and cost accounting in the later stage and possibly even after this period. In order to avoid discrepancies, EComm-1 was nevertheless still classified as a later stage startup for the purposes of this thesis. In terms of the target group, it was notable that the interview partners from the PaaS/SaaS sector were all located in the B2B business, while the e-commerce sector

had a very mixed target group. Here, startups from the B2B, B2C but also B2B2C areas were interviewed. Moreover, in the area of venture capital financing, interviews were conducted with a total of seven venture capital-backed startups and three "bootstrapped", i.e., self-financed, startups. The respondents were all in a leadership position with appropriate responsibility for financial planning and cost accounting in the startups and with relevant insight. The external expert was a startup expert who supports startups daily in terms of venture capital financing, the preparation of financial plans, and has supported many startups in their growth. Therefore, he was able to share profound insights into financial planning and cost accounting at different development stages.

As a result, all criteria for the interview partner selection were fulfilled, and similarly, a heterogeneous sample with startups of various sizes, ages, development stages and industries was generated. Additionally, the websites of the

interviewed startups were used as a secondary data source for data triangulation and to increase construct validity.[250] Through this, missing structural information about the startups could be added after the initial reading of the transcripts, and ambiguities clarified.

3.3. Data analysis

For the analysis of the interviews and thus the investigation of the research question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages, a deductive-inductive approach, according to Kuckartz, was chosen.[251]

This approach provides in the first step the formation of thematic main categories, which are derived from the research question (deductive category formation).[252] This is followed by the inductive coding[253] of the transcripts, which implies a material-specific, open coding with subsequent grouping and categorization of the codes and thus the inductive expansion of the deductive main categories.[254] Thus, this approach ensures a focus on the research question in the first step, and is suitable for the investigation of subjects where the existing theory or research literature is limited, as in the case of the present research subject, through the material-specific coding and generalization in the second step.[255] Therefore, the deductive-inductive approach is appropriate for the investigation of the research question and will be described in greater depth in the following with regard to the specific context of this thesis. For this purpose, Figure 4 illustrates the general flowchart of the data analysis.

In the first step, the semi-structured interviews were transcribed in preparation for the data analysis. The transcription was carried out with the software happyscribe and was based on the simple transcription rules according to Dresing and Prehl, as follows:

1) Transcription was verbatim, i.e., not phonetic or summarized. Existing dialects were translated.
2) Language and punctuations were slightly smoothed. The sentence form was retained, even though it contained syntactical errors.
3) Breaks were indicated by three ellipsis points in parentheses (...).
4) Word breaks and stuttering were smoothed or omitted. Word doublings were only included if they were used as a stylistic device for emphasis. Sentence breaks were marked with the break symbol "-".
5) Filler words such as "em" or "mhm" were not transcribed unless a response consisted only of this utterance.

6) Nonverbal utterances were not transcribed.
7) Each speaker contribution received its own paragraph.
8) Paragraphs of the interviewer were indicated by an "I" and those of the interviewee by a unique abbreviation such as "EComm-1".
9) Incomprehensible words or phrases were marked by (inaudible).
10) All information that allowed conclusions to the interviewed person and the startup were anonymized.[256]

The transcribed interviews can be found in Appendix B. After completing the transcription process, data analysis began with the support of MAXQDA 2020. This process started with the initiating text work, where the interview transcripts were read several times to gain a deeper insight into the data.[257] During this process, interesting and particularly important text passages were marked, and notes or specifics were documented in the form of memos.[258]

Subsequently, the deductive main categories were developed based on the research question, and the transcript paragraphs were coded with the corresponding main categories.[259] Based on the research question, the two main categories of financial planning and cost accounting were deduced and further segmented into the end of the early stage (which EComm-5, PaaS/SaaS-5, PaaS/SaaS-4 belong to), the start of the expansion stage (EComm-4, PaaS/SaaS-3, PaaS/SaaS-2), the expansion stage (EComm-3, PaaS/SaaS-1), and the later stage (EComm-2, EComm-1) to consider the development stages during the deductive coding of the transcripts. After forming the two main categories, the transcripts were coded according to these categories and divided based on the development stages.

With the following step, the inductive analysis of the transcripts began. This initially included the rereading of the transcripts and, at the same time, the generation of material-specific codes.[260] These codes were generated directly from the material to reproduce its content as undistorted as possible.[261] For this purpose, it was decided to use descriptive coding to summarize the content of the interview passage to be coded as briefly as possible in one word or a short phrase.[262] The analysis was carried out from the end of the early stage to the later stage to obtain further input from the later stage startups regarding their early stage implementation of financial planning and cost accounting. Finally, the transcript of the external expert was evaluated inductively, to validate the previous results. Since there were no predetermined codes for this inductive approach, in contrast to the deductive coding, this process is termed as open coding.[263]

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[250]Cf. Yin, 2009, pp.114-117.
[251]Cf. Kuckartz, 2018, pp.97f..
[252]Cf. ibid..
[253]In this thesis, the terms coding or code refer to the summary of an interview passage with a noun or a short phrase. This is also defined as descriptive coding. Cf. Miles et al., 2014, p.74.
[254]Cf. Kuckartz, 2018, pp.97f.; Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, p.71.
[255]Cf. Hsieh & Shannon, 2005, p.1279.

[256]Cf. Dresing & Pehl, 2012, pp.26ff..
[257]Cf. Kuckartz, 2018, p.101; Burnard, 1991, p.462.
[258]Cf. Kuckartz, 2018, p.101.
[259]Cf. ibid., pp.101f..
[260]Cf. Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, pp.71f.; Mayring, 2015, pp.85f..
[261]Cf. ibid..
[262]Cf. Miles et al., 2014, p.74.
[263]Cf. Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279; Mayring, 2015, p.86.
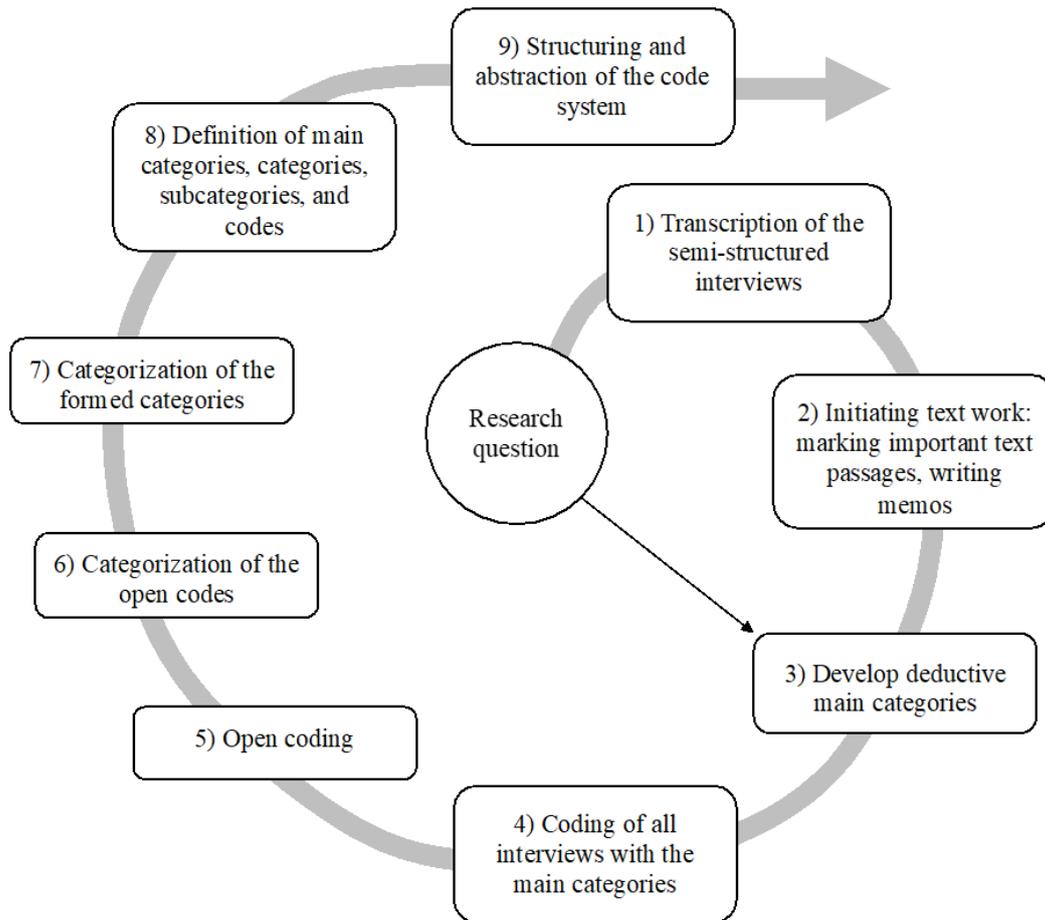
Figure 4: Flowchart data analysis*

*Based on Kuckartz, 2018, p.100; Elo & Kyngäs, 2008, p.109; Hsieh & Shannon, 2005, p.1279.

The following two steps included the categorization of the previously developed codes.[264] In the first step, related codes were grouped and combined into an inductively created category. In the next step, related categories were grouped into a top category. This data grouping created a hierarchical structure, which was essential for clarity. Thus, this inductive data structure extended the deductive main categories. Subsequently, definitions were developed for all categories and codes, which contributed to a better understanding of the code system.[265] Based on the definitions, further related codes were identified and thus adjustments in the structure and abstraction of the code system were made. The resulting phase-specific financial planning and cost-accounting code systems can be found in Appendix C.

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[264]Cf. Elo & Kyngäs, 2008, p.111; Hsieh & Shannon, 2005, p.1279; Miles et al., 2014, p.86; Mayring, 2015, pp.86f..
[265]Cf. Elo & Kyngäs, 2008, p.111; Hsieh & Shannon, 2005, p.1279.

4. Results

4.1. Implementation of financial planning

The first main subject of this thesis, as per the research question, is financial planning. In the following, the results regarding the implementation of financial planning according to the investigated development phases are presented. In a subsequent summary, the main results of the implementation of financial planning are summarized, and the key development steps of financial planning between the development phases are outlined.

4.1.1. End of early stage/ start of expansion stage

With regard to financial planning, the end of the early and the start of the expansion stage are considered collectively since the analysis revealed a similar implementation along these stages. The similar implementation corresponds to the identical objectives of these two phases, namely the achievement of initial revenues and the commencement of growth, but also results from the smooth transition between these two stages. Therefore, the answers of the interview partners to the question about stage classification were partially ambivalent. PaaS/SaaS-5, for instance, responded to

the development stage question with: *"that means we are either very much at the end of your first stage, or just at the beginning of the second stage."*[266] EComm-5 answered with: *"I would say we are just at the end of the early stage and moving into the expansion stage."*[267] Accordingly, due to the similar results and the overlap in stage assignment, the end of the early and the start of the expansion stage are considered collectively.

Among the group of the startups from the end of the early stage and the start of the expansion stage, there is a significant difference in the fundamental decision about the adoption of financial planning. While PaaS/SaaS-5, PaaS/SaaS-4, PaaS/SaaS-3, and PaaS/SaaS-2 have integrated financial planning in their startup, EComm-5 and EComm-4 have so far decided against the introduction. The decision against financial planning is based on several reasons, which are illustrated in Figure 5 and explained in more detail in the following.

The first essential aspect comprises the renunciation of external investors, i.e., bootstrapping. EComm-4 emphasizes in this context that the requirement for a financial plan at the outset is based on the needs of the external investors.[268] For a bootstrapped startup, this obligation of preparing a financial plan for external investors does not apply, thus a financial plan serves the pure business purpose and not an investor process. EComm-5 and EComm-4 point out in this context that the focus in this stage, as a bootstrapped startup, lies on other aspects such as expense management, which can be realized without financial planning due to the still manageable financial structure.[269] Therefore, EComm-5 emphasizes that the monthly *"reporting from the tax advisor, the business evaluation, which shows the current status of the company [. . .] [and shows] what remains [in terms of cash]"*[270] is still sufficient in this development stage. EComm-5 highlights in this context that *"you can also see here that the figures are still very manageable, they still have [. . .] a certain transparency."*[271] Besides the bootstrapping and manageable finances, the dispensability of financial planning is reflected in the already positive cash flow of these two startups. EComm-4 accentuates in this context that for a *"small company with [11-30] employees, financial planning [. . .] doesn't matter; the main point is that we are cashflow positive."*[272] EComm-5 concurs and adds that *"the non-necessity [of financial planning] is due to the fact that [. . .] at the moment and so far there has always been enough liquidity available."*[273] This was possible for EComm-5 through their methodology of prepayment and

their fast market acceptance.[274] Specifically, the customer pays EComm-5 in advance after their individual configuration and order of the product; in turn, EComm-5 uses this capital to pay for the order of goods at the manufacturer as well as all other arising costs for the product and, furthermore, directly disposes of the resulting margin.[275] By *"fast acquiring of customers, [. . .], liquidity arrives quite fast [into the business in this manner]"*[276] and can be used for the expansion of the company. In this context, the presence of liquidity represents a crucial point for not implementing a financial plan. EComm-5 noted that the company *"was provided with liquidity planners at the beginning of the Corona pandemic, since it came to a standstill and no sales were generated for two weeks to see how long the cash would hold out."*[277] However, this planning was quickly ended due to the subsequent online boom.[278] Two further identified aspects represent the effort/benefit dimension of the financial planning and the personal background of the executives. Regarding the effort/benefit dimension of financial planning, EComm-4 argues that the *"necessary ongoing development of the financial planning [...] is a huge effort [...] which does not bring additional revenue."*[279] Consequently, *"it brings more to the company if the CEO makes more sales than keeping the financial planning up to date. Unless you want investors."*[280] Finally, the personal background of the executive plays a crucial role in the question of whether to adopt financial planning. EComm-4 states in this context that financial planning *"is always somewhere a look into the future, which is 99% [...] wrong. [...] That's why I [EComm-4] have certain reservations about this form of fortune-telling."*[281]

Consequently, the financing form, in addition to other aspects, has a decisive influence on the introduction decision. However, it must also be noted in this context that not all bootstrapped startups refrain from implementing financial planning. PaaS/SaaS-5, for instance, is also bootstrapped and has integrated financial planning. Moreover, EComm-5 strives for an introduction within the near future to address capital providers regarding the maintenance of growth and the expansion of the business in the future.[282]

However, as mentioned previously, startups from the end of the early and the start of the expansion stage which have already implemented financial planning were also interviewed. Based on these interviews, the question of how startups from the end of the early stage and the start of the expansion stage implement financial planning instruments will be answered. These two stages do not represent the starting point at which startups integrate financial planning. As PaaS/SaaS-3, PaaS/SaaS-2, PaaS/SaaS-1, and EComm-3

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[266] PaaS/SaaS-5, para.6. The source reference is to the paragraph of PaaS/SaaS-5's interview transcript in Appendix B, where the quotation can be found.
[267] EComm-5, para.6.
[268] Cf. EComm-4, para.16.
[269] Cf. ibid.; EComm-5, para.12.
[270] EComm-5, para.12.
[271] Ibid..
[272] EComm-4, para.20.
[273] EComm-5, para.14.

[274] Cf. ibid., para.8.
[275] Cf. EComm-5, para.8.
[276] Ibid..
[277] Ibid., para.16.
[278] Cf. ibid..
[279] EComm-4, para.28.
[280] Ibid..
[281] Ibid., para.18.
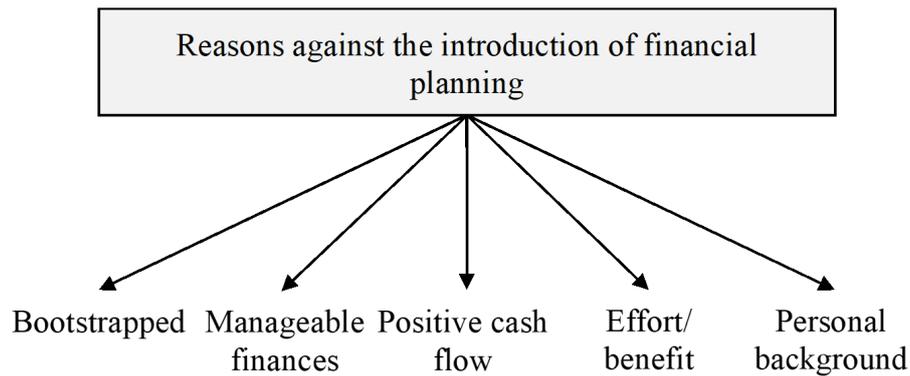[282] Cf. EComm-5, para.20.

Figure 5: Reasons against the introduction of financial planning*

*Own illustration.

point out, the initial implementation already occurs prior to the startup's foundation, in the seed stage.[283] This early adoption is motivated by numerous reasons, of which the most essential ones are illustrated in Figure 6 and will be described next.

Prior to the founding of the company, the evaluation of the business idea constitutes the most crucial aspect, since the financial planning included in the business planning evaluates for the last time before founding *"whether [the startup] can be successful with [its business idea], and if so, under which conditions"*[284] or *"whether a scalable product can be created or not."*[285] The other triggers mentioned also reflect essential aspects of financial planning after foundation, specifically the avoidance of illiquidity. Since only limited revenues are regularly generated at the end of the early and the start of the expansion stage, the cost management is even more important in these phases in order to avoid an illiquidity.[286] Thus, the avoidance of illiquidity simultaneously reflects the creation of a cost overview to compare revenues and costs. Finally, financial planning is integrated to address the first investors. Therefore, the founders try to *"symbolize [with financial planning] that [the startup] can be successful with what is planned to attract investors."*[287] Accordingly, even after the startup is founded, at the end of the early and the start of the expansion stage, *"the most important concerns are liquidity management and investor processes"*[288] in implementing financial planning.

The starting point for the implementation of financial planning at the end of the early and the start of the expansion stage is, as in the other stages, the target and assumption planning, for instance, in terms of a roadmap. In this context, a distinction is made between detailed planning with a planning horizon of twelve months and rough planning with a

planning horizon of up to five years. The detailed planning includes short-term objectives, like *"what [the management] want[s] to achieve in terms of product sales and market entry or funding"*[289], and focuses on the liquidity issue, namely *"how long does [the] money have to suffice?"*[290] During the long-term rough planning, *"the future is expanded based on various assumptions"*[291], such as the inclusion of *"sales increases [...], efficiency increases or even saturation effects depending on the market size."*[292] Equally, strategic objectives such as a revenue growth rate by year five are defined and used to review *"which milestones should be achieved by when and if they will be achieved."*[293] The determination of short and long-term objectives and assumptions is carried out by the management in a top-down approach at the end of the early and the start of the expansion stage.[294] Furthermore, PaaS/SaaS-1 adds that the investors have a decisive impact by *"specifying goals that have to be included in the planning"*[295] and against which the startup's performance is ultimately measured.

After completing the target and assumption planning, the startups from the end of the early and the start of the expansion stage continue with the revenue planning. Within this context, the startups examined exhibit PaaS/SaaS-specific approaches, which show slight divergences due to their underlying revenue model. For example, PaaS/SaaS-3 offers its users, commercial retailers, a digital bidding service for their products on a platform; thus, contractually regulated commission revenues provide the basis for revenue planning.[296] The planning of these revenues was integrated by PaaS/SaaS-3 with the support of the investors based on marketing metrics *"from classic e-commerce, where [...] revenues [can be] derived from users."*[297] Based on these marketing metrics,

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[283]Cf.   PaaS/SaaS-3, para.15; PaaS/SaaS-2, para.10; PaaS/SaaS-1, para.10; EComm-3, para.17.
[284]PaaS/SaaS-1, para.10.
[285]Ibid., para.12.
[286]Cf. Exp, para.20.
[287]PaaS/SaaS-1, para.10.
[288]Exp, para.2.

[289]PaaS/SaaS-5, para.20.
[290]Exp, para. 14.
[291]PaaS/SaaS-5, para.14.
[292]Ibid..
[293]Exp, para.16.
[294]Cf. PaaS/SaaS-4, para.30.
[295]PaaS/SaaS-1, para.20.
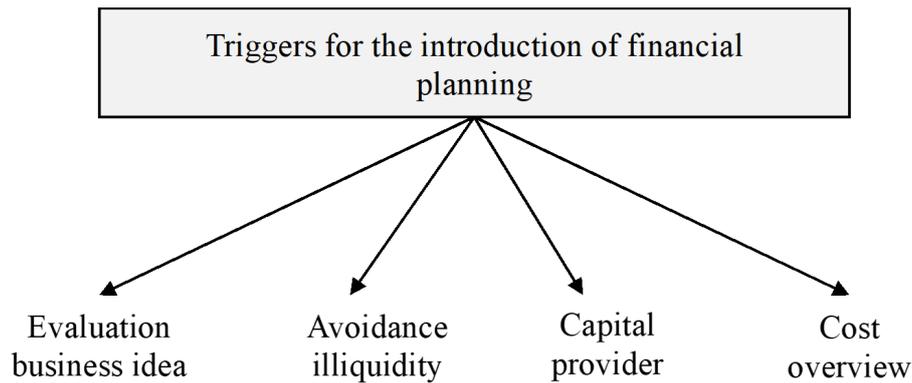[296]Cf. PaaS/SaaS-3, para.19.
[297]Ibid..

Figure 6: Triggers for the introduction of financial planning*

*Own illustration.

like "*number of users [...], registrations per month, conversion rate, cost per click, advertising and so on*"[298] it can be determined "*how many marketing costs are necessary for € 1 in revenue.*"[299] Building on this marketing cost to revenue ratio, historical values, and strategic objectives, PaaS/SaaS-3 projects the revenues on monthly and annual slices for the following five years. Exp points out in this context that the use of such online marketing metrics "*is becoming increasingly important, especially in digital business models [...] to build up a better understanding of how individual marketing metrics work and what can then be changed in the planning.*"[300]

PaaS/SaaS-5, PaaS/SaaS-4, and PaaS/SaaS-2 operate with a recurring revenue model for contracted terms. This revenue model was integrated into PaaS/SaaS-2 through the advice and support of their investors, resulting in a "*shift from one-time revenues [...] to SaaS, [i.e.,] to small recurring revenues.*"[301] The B2B business model of the startups examined represents a specific aspect at this point, which means that "*significantly fewer customers [are acquired], but the customers are significantly more valuable*"[302] than in the B2C area, i.e., their customer lifetime value is considerably higher. Accordingly, planning the revenues in the PaaS/SaaS specific B2B recurring revenue model starts with an examination of "*who do we have as clients?*"[303] PaaS/SaaS-4 states in this step that the planning of the revenues of these clients can be accomplished through the manageable contracts and the "*outgoing invoices that we are going to provide the service.*"[304] PaaS/SaaS-5 further outlines that this is followed by an intensive "*look at which customers we think are coming in*"[305] for short-term revenue planning to augment planning with those revenues. Subsequently, this revenue model

also uses "*marketing/sales cost budgets for planning [not yet contracted] sales*"[306] for long-term planning, via the use of marketing metrics such as "*the conversion rate [and] customer acquisition costs.*"[307] PaaS/SaaS-4 concludes that the "*projecting [of] sales [must] take into account [the] marketing streams.*"[308] As a result, the revenue planning of all startups from the end of the early and the start of the expansion stage follows the bottom-up approach. This implies that revenues are calculated starting from marketing metrics or customer consideration, rather than top-down from market size.[309]

The planning of the revenues represents the greatest challenge in financial planning for startups from the end of the early and the beginning of the expansion stage. Within this context, PaaS/SaaS-2 and PaaS/SaaS-5 stress that especially the dependency on business partners is a huge challenge in revenue planning:

> "*I think the biggest challenge is always revenue planning for small companies. So, are the things that you have planned so far ahead really going to happen? Because these are actually things that you can only influence indirectly, [...] because the cooperation of the customers is of course essential, or simply a prerequisite.*"[310]

> "*The greatest challenge [...] actually has to do with revenues, because in some cases you also have very large B2B customers who could theoretically redeem a large ticket in one fell swoop. And then of course it's important to know whether the money will come in month X or only three months later.*"[311]

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[298] PaaS/SaaS-3, para.31.
[299] Ibid..
[300] Exp, para.8.
[301] PaaS/SaaS-2, para.16.
[302] PaaS/SaaS-1, para.16.
[303] PaaS/SaaS-4, para.12.
[304] Ibid., para.14.
[305] PaaS/SaaS-5, para.20.

[306] Ibid., para.12.
[307] Ibid., para.22.
[308] PaaS/SaaS-4, para.10.
[309] Cf. Exp, para.12.
[310] PaaS/SaaS-2, para.24.
[311] PaaS/SaaS-5, para.46.

Accordingly, Exp concludes that against this background, the challenge is the "*clean depiction of the operating business*"[312], since the incorrect planning of revenues means that, in the worst case, the incurred expenses cannot be covered and could result in illiquidity.

Subsequently[313] or frequently in parallel[314] to the revenue planning, the investment and cost planning occur. The distinction between investment and cost planning is still nebulous in this context, since investments mean "*no large office investments or cars*"[315] in this stage. PaaS/SaaS-3 clarifies that investments refer, for instance, to external service providers "*who are commissioned to build the platform [...] and [can be easily planned] by obtaining offers with payment steps.*"[316] PaaS/SaaS-5, on the other hand, adds freelancer costs to the cost planning;[317] thus, the distinction between cost and investment planning varies between startups in this stage. However, the planning of necessary investments is fundamentally derived from the assumption and target planning. The planning of costs generally involves fixed costs, "*such as office, tax advisor, accounting, hosting, telecommunications, insurance, lawyer*"[318] or personnel costs, and variable costs, such as "*marketing/sales cost budgets*"[319], which "*are very manageable in digital business models.*"[320] Therefore, cost planning does not pose a challenge for the startups, "*because [they] can cover the running costs quite well*"[321] and can plan the total incurred costs accurately due to the few variable costs.

This investment and cost planning is followed by financing planning. Venture capital-backed startups plan to raise funding on a "*usual cycle [...] between 12 and 18 months.*"[322] The planned timing of funding is highly dependent on the cash flow planning, which shows how long the available capital will be sufficient and when a funding round must be closed at the latest.

Based on these previous plans, the balance sheet and income statement items are planned. PaaS/SaaS-3, for instance, has established a (SKR) 04 Datev standard cost framework in the Excel calculation for this allocation of the previously planned revenues, individual costs, investments, and financings.[323] This involves assigning the planned items to the corresponding Datev accounts, which subsequently enables a straightforward assignment to the balance sheet and income statement items and thus their planning. Based on this balance sheet and income statement allocation, the cash flow is planned on a cash-effective, accrual basis.[324] The cash

flow represents the essential instrument of the startups from the end of the early and the start of the expansion stage, as it provides information on "*how long the cash will still last*"[325] and thus provides the basis for planning a follow-up funding round.[326] Hence, PaaS/SaaS-5 declares that cash flow planning contributes to check, especially in the short term, "*when do amounts probably arrive in our account, when do they go out, do we have [a] liquidity problem? How long does the cash last, what is the cash burn rate and run rate?*"[327] Furthermore, Exp emphasizes that cash flow planning supports the startup in "*managing costs, [because] in the early stages there are still not so many revenues. That means [the startups] have to think carefully about what [they] spend the limited capital [...] on and how long it will last. What is the impact?*"[328] Consequently, the focus of planning at the end of the early stage and at the beginning of the expansion stage is on short-term detailed planning, intending to be able to allocate the cash flows as closely as possible and on an accrual basis to avoid the illiquidity of the company.

The control of this established plan is carried out monthly with the help of actual values in the examined phase.[329] This control is crucial for the short-term detailed planning, as a substantial deviation in revenues or costs can lead to significant consequences for the cash flow, resulting, for instance, in liquidity shortages when continuing the existing plan. Therefore, the short-term detailed plan is adjusted quarterly in the case of PaaS/SaaS-2[330] or even continuously in the case of PaaS/SaaS-5 when innovations or new findings occur[331].

In implementing financial planning, the startups from the end of the early and the start of the expansion stage pay particular attention to a dynamic configuration. Therefore, the model should already be designed in this stage in a way that allows a quick reaction to "*various influences [...], [such as] what does it mean if my revenue increases by 20%, what happens to my result*"[332], or "*I do more marketing, then a formula is used in my financial planning to calculate what the sales are likely to be.*"[333] Consequently, the financial planning is already designed coherently and dynamically in the early stages to convince investors in financing rounds of the financial model through the already existing scenery capability[334], but also to be able to depict the effects of individual measures quickly and transparently to make decisions on this basis.[335] A further focus in the design of the planning is, as already indicated above, "*the clean mapping of the operating business to accurately represent the short-term sales based on appropriate Key Performance Indicators (KPIs)*"[336] and thus to reduce the

[312]Exp, para.20.
[313]Cf. PaaS/SaaS-3, para.19.
[314]Cf. PaaS/SaaS-5, para.12; PaaS/SaaS-2, para.10.
[315]PaaS/SaaS-3, para.19.
[316]Ibid..
[317]Cf. PaaS/SaaS-5, para.32.
[318]Ibid..
[319]Ibid., para.12.
[320]PaaS/SaaS-3, para.39.
[321]PaaS/SaaS-2, para.24.
[322]Exp, para.14.
[323]Cf. PaaS/SaaS-3, para.25.
[324]Cf. ibid..

[325]Ibid., para.27.
[326]Cf. ibid..
[327]PaaS/SaaS-5, para.20.
[328]Exp, para.20.
[329]Cf. PaaS/SaaS-2, para.20; PaaS/SaaS-4, para.12.
[330]Cf. PaaS/SaaS-2, para.20.
[331]Cf. PaaS/SaaS-5, para.16.
[332]PaaS/SaaS-3, para.11.
[333]PaaS/SaaS-5, para.12.
[334]Cf. PaaS/SaaS-3, para.11.
[335]Cf. Exp, para.8.
[336]Ibid., para.20.

risk of illiquidity.

The startups examined from the end of the early stage and start of the expansion stage mostly use a standard Excel calculation to implement the financial planning. PaaS/SaaS-3 emphasizes that Excel offers the advantage that "*it is rather free*"[337] and consequently, based on the necessary know-how, it allows an easy implementation of a dynamic financial planning model. PaaS/SaaS-3 further underlines in this respect that the use of an Enterprise-Resource-Planning (ERP) system, such as SAP, is unsuitable for these early startup stages due to the cost factor, the ease of use, and the inflexibility of these systems.[338] PaaS/SaaS-3 also highlights that "*the introduction of a financial planning system [like SAP] in [...] this phase would not make sense [...], since you would overtake yourself in the question, what does this financial planning system actually bring me and how flexible is it?*"[339] PaaS/SaaS-5 concludes with regard to the implementation "*that you should not write a dissertation with your financial planning in the early stage, but it must be sufficient so that you can make good decisions and get a good picture of what the cash looks like. [...] Otherwise it would be a waste of time and inefficient.*"[340] As a result, finding the right and necessary balance in the implementation of financial planning is a decisive factor in this stage. An exception to the system used is presented by PaaS/SaaS-5, which offers a financial planning software on the market and consequently also uses it for its own planning, in order to equally recognize and eliminate error susceptibilities in the system.[341]

Compared to the initial implementation of the financial planning in the seed stage, several development steps towards the end of the early and the start of the expansion stage could be identified. Although the dynamic structure of the financial planning was already considered in the seed stage implementation, it was further expanded due to the more detailed financial planning. Furthermore, financial planning was refined by investor-related development steps, especially in the area of revenue planning as described above. Accordingly, the inclusion of marketing KPIs and the shift to industry-specific revenue models, in order to improve the operational planning, represent further development steps from the seed stage to the end of the early and the start of the expansion stage. PaaS/SaaS-3 emphasizes that the next development step will be the start of automating the financial planning process: "*since we still work very much manually, I would like to have [...] a stronger automation.*"[342]

4.1.2. Expansion stage

In the subsequent expansion stage, the basic implementation of the financial planning follows the same scheme from the end of the early and the beginning of the expansion stage.

Again, the first step involves the planning of the strategic objectives and assumptions, such as internationalization or new product launches[343], for the short-term detailed planning (12 to 18 months) and the long-term rough planning (five years) in the top line of the startup. Due to the more differentiated corporate structure of the two startups examined from this stage (EComm-3, PaaS/SaaS-1) compared to the ones from the end of the early and the start of the expansion stage, these objectives are communicated between the individual departments and thus "*each department derives targets [...] that are aimed at these strategic objectives.*"[344] Therefore, the planning of the strategic goals and assumptions also occurs in a top-down manner in the expansion stage.

The subsequent revenue planning reveals the development step in the financial planning compared to the previous stage, but also highlights the differences in the implementation of the financial planning between the two industries examined. EComm-3 operates in this context in e-commerce with a B2C target group. Here, the starting point for revenue planning represents a top-down sales planning in which "*the volume to be achieved [...] is derived from the market size.*"[345] Such a top-down approach for revenue planning is justified by "*the rapid growth of the market in which [...] [EComm-3] operates*"[346] and by "*the scale on which [EComm-3] now operates, with an average of [one to two] million Euro in revenue per month, where [...] calculations can already be made very statically.*"[347] After defining the revenue to be achieved, an analysis of the key sales figures of the offered products is carried out, i.e. the consideration of the so-called unit economics. In this process, the necessary sales to achieve this revenue target are calculated based on the average order volume.[348] EComm-3 represents at this point a one-product company that offers its customers an online configurator to enable them to set up the product according to their wishes before it is installed on the customer's site by the company's installers. Therefore, the calculation of the average order volume can easily be done using historical values. The next step involves the determination of the required marketing expenses for achieving these sales. For this purpose, the sales department uses a sales driver that automatically calculates the required resources for the necessary marketing efforts based on key figures from "*performance marketing [...] such as the number of necessary leads*"[349], the costs per click or the costs per lead. A further driver, called the "*put-through rate*",[350] was integrated into the revenue planning process of EComm-3, which automatically integrates the "*offset between the sale and installation of the product and thus also the invoicing.*"[351] This put-through rate is also based on his-

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[337] PaaS/SaaS-3, para.13.
[338] Cf. ibid., para.11.
[339] Ibid., para.13.
[340] PaaS/SaaS-5, para.30.
[341] Cf. ibid., para.10.
[342] PaaS/SaaS-3, para.37.

[343] Cf. EComm-3, para.31.
[344] PaaS/SaaS-1, para.28.
[345] EComm-3, para.19.
[346] EComm-3, para.19.
[347] Ibid., para.33.
[348] Cf. ibid., para.39.
[349] Ibid., para.19.
[350] Ibid..
[351] Ibid..

torical values and has a range of "*90 to 110 days.*"[352] Using the time offset of the put-through-rate, a further driver from the operations department determines the "*installation activities.*"[353] This driver includes the "*number of units to be installed per month and plans the personal expenses [of the operations department] [...], the material expenses, installation costs, etc.*"[354] Thus, EComm-3 started to automate the process of revenue planning as well as cost or budget planning on the basis of drivers. Currently, many departments "*such as finance, tech, [...] or brand and communication marketing*"[355] still operate independently of drivers; therefore, "*in the future [automation] will be significantly expanded and dedicated drivers will be developed for most departments [...] to be able to determine at least 80% of the resource requirements based on drivers.*"[356] This driver-based planning was implemented primarily due to the increasingly complex corporate structure resulting from the rapid growth of the company, so that the departments "*had previously planned [the necessary budget] relatively independently of each other.*"[357] With the implementation of the drivers, EComm-3 pursues the objective of "*better displaying the interrelationships, automating [the planning process] and developing it in a better interlocking manner.*"[358]

The top-down approach is also used for long-term revenue planning at PaaS/SaaS-1 in the B2B specific area. In this regard, PaaS/SaaS-1 plans "*the development of the revenue based on the targeted market share.*"[359] EComm-3 highlights that such an approach proves useful when "*the market is already relatively crowded*"[360], as in the case of PaaS/SaaS-1. In the short-term detailed planning, as in the case of the previously presented PaaS/SaaS startups from the end of the early stage and the beginning of the expansion stage, bottom-up revenue planning is carried out. This is again caused by the B2B business model, since "*you have significantly fewer customers [than in the B2C area], [...] allowing you to deal with each one in great detail*"[361], as PaaS/SaaS-1 accentuates. The necessary figures for the planning of already acquired customers are provided by multi-year contracts, which enable the planning of recurring revenues.[362] For the planning of customers to be acquired, detailed "*individual business cases*"[363] are calculated, since PaaS/SaaS-1 acquires "*only two close full customers [...] per year.*"[364] PaaS/SaaS-1 has raised the detail level of short-term revenue planning to a daily basis for this purpose.[365]

Regarding the industry, a significant difference can be inferred from the two considered revenue plans. This lies in the underlying revenue model, which is highly dependent on the industry. While in e-commerce, non-recurring revenues are regularly generated by the sale of a product to the customer, in the PaaS/SaaS area, a recurring revenue model is often used. Therefore, revenue planning in e-commerce is usually based on unit economics such as the average order volume or average number of sales per month, whereas in the PaaS/SaaS-specific B2B area, the planning is often driven by customer economics such as the average customer lifetime value and contractual agreements.

In terms of cost planning, PaaS/SaaS-1 places a particular focus on planning personnel costs "*because [the PaaS/SaaS business model] is very personnel-intensive.*"[366] Here, the planning of personnel requirements is performed on a departmental level in a bottom-up approach, allowing the allocation of the necessary resources to the individual departments to fulfill the strategic objectives. The planning of the remaining costs takes place in PaaS/SaaS-1 through budget specifications for the individual departments by management in a top-down approach. In EComm-3, cost planning is partially automated via drivers such as sales or installation activities, as outlined previously. Cost planning for the driver-independent departments is carried out in a top-down manner, whereby the individual departments act according to the budget specifications of the top line.[367] In the future, this resource planning will be driver-based across all departments of EComm-3.[368]

Building on this revenue and cost planning and the strategically defined investments and financings, the planning of the balance sheet, income statement and cash flow is also carried out in the expansion stage through the dynamic planning design. Again, the focus in this phase is on cash flow planning and thus on short-term financial planning, with regard to "*how long [the] cash run rate will last [and] when the next financing round should be initiated.*"[369] PaaS/SaaS-1 stresses in this context that although a five-year plan is created, "*planning more than two years ahead does not make sense [...] [as] the world, markets, and business are now moving so fast.*"[370]

As in the previous stage, these plans are monitored monthly using target-actual comparisons. PaaS/SaaS-1 emphasizes that this comparison is also necessary since in this interval the startup must report to the investors "*how it stands to its planned developments.*"[371] Furthermore, PaaS/SaaS-1 accentuates "*that a new adjustment of the existing plan [...] should be completed at least every six months*"[372], to consider deviations and new developments, such as failed product launches.

The realization of financial planning in the expansion stage thus focuses on the implementation of integral (cross-

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[352] EComm-3, para.19.
[353] Ibid..
[354] Ibid..
[355] Ibid..
[356] Ibid., para.21.
[357] EComm-3, para.21.
[358] Ibid..
[359] PaaS/SaaS-1, para.12.
[360] EComm-3, para.19.
[361] PaaS/SaaS-1, para.16.
[362] Cf. ibid..
[363] Ibid..
[364] Ibid., para.26.
[365] Cf. ibid., para.16.

[366] PaaS/SaaS-1, para.26.
[367] Cf. EComm-3, para.21.
[368] Cf. ibid..
[369] Ibid., para.27.
[370] PaaS/SaaS-1, para.18.
[371] Ibid., para.20.
[372] Ibid., para.18.

company) and coherent planning, in addition to the already established dynamic implementation from the previous stage. This focus is related to the company's growth and the emergence of new departments and responsibilities, which must find appropriate consideration in financial planning, as PaaS/SaaS-1 explains:

> "Planning is much easier to implement in the early stages with just a few people [than in the expansion phase] because as the company grows, more and more responsibilities arise, and thus more decision makers also have an impact on the financial figures."[373]

PaaS/SaaS-1 further emphasizes the necessity of human resource MCSs to integrate and follow this plan, ensuring that "in top-down planning […] the defined objectives and released resources are also communicated down to the level of a tech division manager or the head of a logistics subdivision."[374] Otherwise, there is a risk that due to unknown budget restrictions, investments or expenditures are made that have not received consideration in the planning. Consequently, PaaS/SaaS-1 concludes "that finance must repeatedly create a [cross-company] framework, […] which also must be known and lived [by all departments]."[375] EComm-3 outlines that the focus of planning is "to present correlations, to automate and to develop better interdependencies."[376] For this purpose, dedicated drivers for the individual departments were developed in single cases and will be further developed. These drivers represent the interrelationships of the departments and can determine the resource restrictions automatically on this basis. Thus, the "previous independent planning [of the departments]"[377] was broken up with the introduction of drivers.

For the implementation of the financial planning in the expansion stage, an Excel calculation is still used. EComm-3 justifies the choice of Excel "with the advantage of flexibility"[378], so that the interfaces of the driver-based planning can be represented in the best way with it.

The next development steps involve, first of all, letting "the planning grow further"[379], and second, as EComm-3 emphasizes, developing "drivers across the entire value chain of the startup, which then allow optimization […] as well, [i.e.,] to integrate an efficiency process."[380]

4.1.3. Later stage

The final stage to be considered, known as the later stage, encompasses startups with already successfully completed IPOs (EComm-1 and EComm-2). Both companies integrated an ERP system as part of the IPO, but also due to their strong growth and the resulting complex corporate structure.[381] Besides creating an integrated and coherent view of the company, this system also enables automated data collection and planning.[382]

Even in the later stage, the planning of the strategic objectives for the five-year plan and the one-year plan represents the starting point for financial planning. Thereby, the company management plans and communicates the objectives in a top-down manner within the framework of the corporate strategy for the next five years, such as "a growth of 20% to 25% […], a profitability of 2 to 3.5% in the following years"[383] or even the "establishment of a new warehouse in France in two years […] [and] the expansion into Eastern Europe."[384] Regarding the planning of short-term objectives, EComm-1 accentuates that in addition to management's strategic objectives, "operational […] initiatives [are] planned on top, which ultimately should lead to this revenue growth."[385] Accordingly, EComm-1 combines the top-down approach with the bottom-up approach for planning and checking the feasibility of the short-term objectives. The basis for defining these objectives includes historical values and current market developments,[386] as well as real-time data generated by queries from the ERP system, "like which [products] have higher margins and which have lower margins."[387]

Based on the planning of the objectives and the assumptions, the planning of revenues is also carried out first in the later stage. EComm-1 and EComm-2 initially base their revenue planning on a top-down approach whereby the revenue objective is derived from the top line on the targeted market share.[388] EComm-1 states in its last annual report that "the goal continues to be growing faster than the market and further increasing [the] market share as a result."[389] Since EComm-1 and EComm-2 operate in an international environment with multiple revenue streams, this top line revenue target represents the result of a consolidated revenue plan. In their planning approach, both EComm-1 and EComm-2 subdivide by country and revenue stream[390] to "project first at the country level what […] is achievable in terms of revenue."[391] In dividing this revenue, EComm-1 again differentiates between revenue from traditional e-commerce and the PaaS-specific revenue share, where merchants "offer their goods on [EComm-1's] website and pay a commission upon a successful sale."[392] In contrast, EComm-2 differentiates between target group-

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[373] PaaS/SaaS-1, para.22.
[374] Ibid., para.24.
[375] Ibid..
[376] EComm-3, para.21.
[377] Ibid..
[378] Ibid., para.23.
[379] Exp., para.18.
[380] EComm-3, para.35.

[381] Cf. EComm-2, para.2.
[382] Cf. ibid., para.20.
[383] EComm-1, para.5.
[384] Ibid., para.11.
[385] Ibid., para.9.
[386] Cf. EComm-1, annual report 2020; EComm-2, annual report 2020. To preserve the anonymity of EComm-1 and EComm-2, the sources of the annual reports are not added to the reference list.
[387] EComm-2, para.22.
[388] Cf. EComm-1, annual report 2020; EComm-2, annual report 2020.
[389] EComm-1, annual report 2020.
[390] Cf. EComm-1, para.13; EComm-2, para.18.
[391] EComm-1, para.13.
[392] EComm-1, para.13.

specific revenue categories in its planning.[393] EComm-2 accentuates that the planning of the country-specific revenue categories is automated by means of queries from the ERP system[394], which are *"coordinated with the managing directors of the [individual] countries, so that they [. . .] can also adjust the growth targets of the respectively country again."*[395] The country-specific view is finally summarized in a consolidation, which again should be in line with the strategic objective of the top line.

The subsequent cost planning is done by drivers at EComm-1. For this purpose, a translation from revenue to the required number of goods sold is carried out. To calculate the required number of goods sold, the planned revenue in the e-commerce segment is divided by the average purchase price per good.[396] With the aid of this translation, the necessary drivers for all business units are defined and distributed, enabling the units to plan their necessary budgets automatically using these predefined drivers and their own budget assumptions, such as cost rates.[397] For example, the necessary number of goods sold is transmitted to the purchasing department, allowing it to carry out appropriate planning with an average purchase price per good.[398] The logistics department receives drivers such as *"how many parts go into the warehouse [. . .], how many parts must be handled [. . .], how many parts are in a package on average [. . .], [or] how many packages must be shipped"*[399] from the market department, allowing them to calculate the corresponding costs and the necessary budget from existing cost rates like shipping costs.[400] Ultimately, the individual budget plans of the respective units are consolidated, resulting in a total necessary budget.[401] In contrast, EComm-2 works with queries from the ERP system for cost planning, *"from which [among other things] the material costs can be drawn very well and detailed from the platform [. . .] and can be evaluated very good via the business analytics. For this purpose, there is also a large business analytics department, which then evaluates this from scratch as well."*[402]

Building on this revenue and cost planning and the strategically defined investments and financings, the balance sheet, income statement and cash flow are also planned in the later stage. Regarding the control of the short-term plan, different levels of granularity can be observed between EComm-1 and EComm-2. While EComm-1 controls the short-term plan weekly,[403] EComm-2 controls it daily *"by means of two to three reports from the business analytics [department]."*[404] The actual results are presented to the management in a monthly

report; based on this, EComm-2 decides monthly whether to adjust the plan.[405] By contrast, EComm-1 decides on a quarterly basis whether an adjustment of the plan is necessary and does so if required.[406] In this respect, EComm-1 criticizes excessive adjustment of the financial plan, since *"it represents a very high effort [. . .] and then also leads to a pseudo accuracy at a certain point."*[407]

In the implementation of financial planning, both EComm-1 and EComm-2 have placed particular attention on a high level of detail. EComm-1 justifies this with the increasingly complex and growing company structure, which makes *"the revenue composition more complicated, since several business models exist internally from which several revenue streams come [. . .] or the logistics network becomes more complicated, since you have several locations with different cost structures. A warehouse in Sweden is more expensive than in Poland."*[408] EComm-2 adds that the level of detail was positively influenced by *"the consolidated aggregation of planning in the individual countries."*[409] A further focus is placed on automation in the implementation of financial planning. EComm-1 states in this context that planning in the later stage is *"quite complex and can only be handled again through automation."*[410] Moreover, EComm-2 explains that, with the help of automation, *"data are drawn from [the operational ERP system] via queries and the financial planning is built upon this data"*[411], meaning that the database for planning is located in a single source and not, as was previously the case, *"drawn together from many sources."*[412] A third point that is focused on in the implementation of financial planning in the later stage is the consistency of the planning. EComm-2 underlines in this context that when approaching the IPO, *"everything [became] much more structured, so that you don't have a system that is constantly modified again, but rather you also have consistency in it [. . .], so that you can compare the planning from the previous year with the planning from this year and other parameters are not suddenly included."*[413] However, EComm-2 and EComm-1 clearly differ in their approach on this point. EComm-1 expresses that the *"process of annual planning is very different every year, since there is still a lot of learning about how to think about certain things and especially how the interactions are."*[414] EComm-1 cites communication as an essential point for achieving a consistent planning process. Thereby, a lack of communication poses the main problem for the inconsistent planning process at EComm-1 since *"there are so many teams involved now, so it's just difficult to keep everybody on the same information level*

[393] Cf. EComm-2, para.4.
[394] Cf. ibid., para.22.
[395] Ibid..
[396] Cf. EComm-1, para.23.
[397] Cf. ibid..
[398] Cf. ibid., para.13.
[399] Ibid..
[400] Cf. ibid., para.17.
[401] Cf. ibid., para.13.
[402] EComm-2, para.24.
[403] Cf. EComm-1, para.7.
[404] EComm-2, para.46.

[405] Cf. ibid..
[406] Cf. EComm-1, para.9.
[407] Ibid..
[408] Ibid., para.15.
[409] EComm-2, para.16.
[410] EComm-1, para.17.
[411] EComm-2, para.20.
[412] Ibid..
[413] EComm-2, para.20.
[414] EComm-1, para.15.

all the time."[415] Due to this lack of information in some parts of the company, inconsistencies arise in the planning process, so that things can "*quickly go in the wrong direction*"[416], such as using the wrong drivers for budget planning.[417]

EComm-2 uses Google Sheets as the financial planning system, where the automatically generated data from the ERP system serve as the basis.[418]

As the next development step, EComm-1 sees the emergence of a more consistent planning process, whereby planning "*is not constantly revised and touched on anew.*"[419] However, overall, both later-stage startups examined regard their financial planning as very mature, since, on the one hand, "*an extremely large financial organization has been established [in both startups], but on the other hand [both startups] also try to underpin everything with figures and correspondingly important planning processes are also assessed for [both] compan[ies].*"[420]

4.1.4. Summary

In summary, the results show a distinct contrast in the first step with regard to the fundamental decision to introduce financial planning in the early startup stages. In this context, EComm-5 and EComm-4 justify their decision not to introduce financial planning with the bootstrapping and still manageable finances. Accordingly, for both startups, the monthly business evaluation by the tax advisor is still sufficient.[421] In contrast, the remaining eight startups examined have integrated financial planning. This was already established in the seed stage of the startups for the validation of the business idea. The underlying financial planning process follows the same scheme along all development stages, as illustrated in the first part of Figure 7.

The planning basis represents a top-down assumption planning for the detailed one-year plan and the rough five-year plan for all startups. Here, the top line of the company and the investors plan the strategic objectives of the company. These objectives from the assumption planning represent milestones for all startups, against which their performance is measured. In its one-year planning, EComm-1, as a later stage startup, also considers operational initiatives, thus linking a top-down and bottom-up approach.[422]

Building on this assumption planning, all startups investigated first carry out the revenue planning. The PaaS/SaaS startups from the end of the early stage and the start of the expansion stage examined pursue an often investor-driven bottom-up approach for revenue planning, whereby revenues are planned on the basis of marketing metrics, as well as existing and planned customer contracts. In contrast, the startups from the expansion and later stages follow a top-down approach for the planning of revenues based on the planned market shares or the planned revenue volume. EComm-3 argues that this approach is useful for startups that already generate "*an average of [one to two] million Euro in revenue per month, [so that] calculations can already be made very statically.*"[423] Based on the planned revenue, the startups from e-commerce calculate the necessary sales using the average order volume, while the startups from the PaaS/SaaS-specific area calculate the number of necessary customers using the average customer lifetime value. However, despite this top-down approach, PaaS/SaaS-1 plans the individual revenues of existing contract customers and planned customers on a daily granular level in the short-term revenue planning and thus in a bottom-up manner, due to the small but very valuable number of customers.[424] The industry-specific differences in the planning of the startups are particularly evident in the revenue planning. While PaaS/SaaS startups with few customers from the B2B sector operate with customer economics, such as the average customer lifetime value or contractual agreements, in their planning, e-commerce startups operate with unit economics, such as the average order volume or the average order value per good.

The simultaneous or subsequent cost planning proves to be simple for the startups from the end of the early stage and the start of the expansion stage, as there are few variables and many fixed costs in digital business models, so that the still few individual cost elements incurred in this stage can usually be easily planned independently of the departments. The costs are planned in line with the revenue, so that a higher marketing expense must result in revenue growth. In the expansion stage, a department-specific cost planning occurs, in which the first automation approaches are established, for example, by using drivers for automated planning of single costs based on the sales. At the later stage, cost planning is fully automated on a department-specific basis using drivers in EComm-1 or queries from the ERP system in EComm-2.

The planning of investments also follows from the assumption planning, thus the planned investments, such as a new warehouse, are considered numerically in the investment planning. While the investments are clearly arranged at the beginning and mainly include the development, investments in the later stage are made in new warehouses or in the establishment of new international locations.

The financing plan as the last basic plan in the upper left area of Figure 7 considers all previously planned aspects to determine when the next financing round must be initiated. For this purpose, the cash flow planning is also particularly suitable since it indicates when the available liquid resources will be used up.

Based on this planning foundation, the balance sheet, income statement and cash flow are planned in all startups examined. Here, the focus is on short-term cash flow planning, especially at the end of the early stage and the beginning of

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[415]EComm-1, para.19.
[416]Ibid..
[417]Cf. ibid..
[418]Cf. EComm-2, para.18.
[419]EComm-1, para.27.
[420]Ibid..
[421]Cf. EComm-4, para.16; EComm-5, para.12.
[422]Cf. EComm-1, para.9.

[423]EComm-3, para.38.
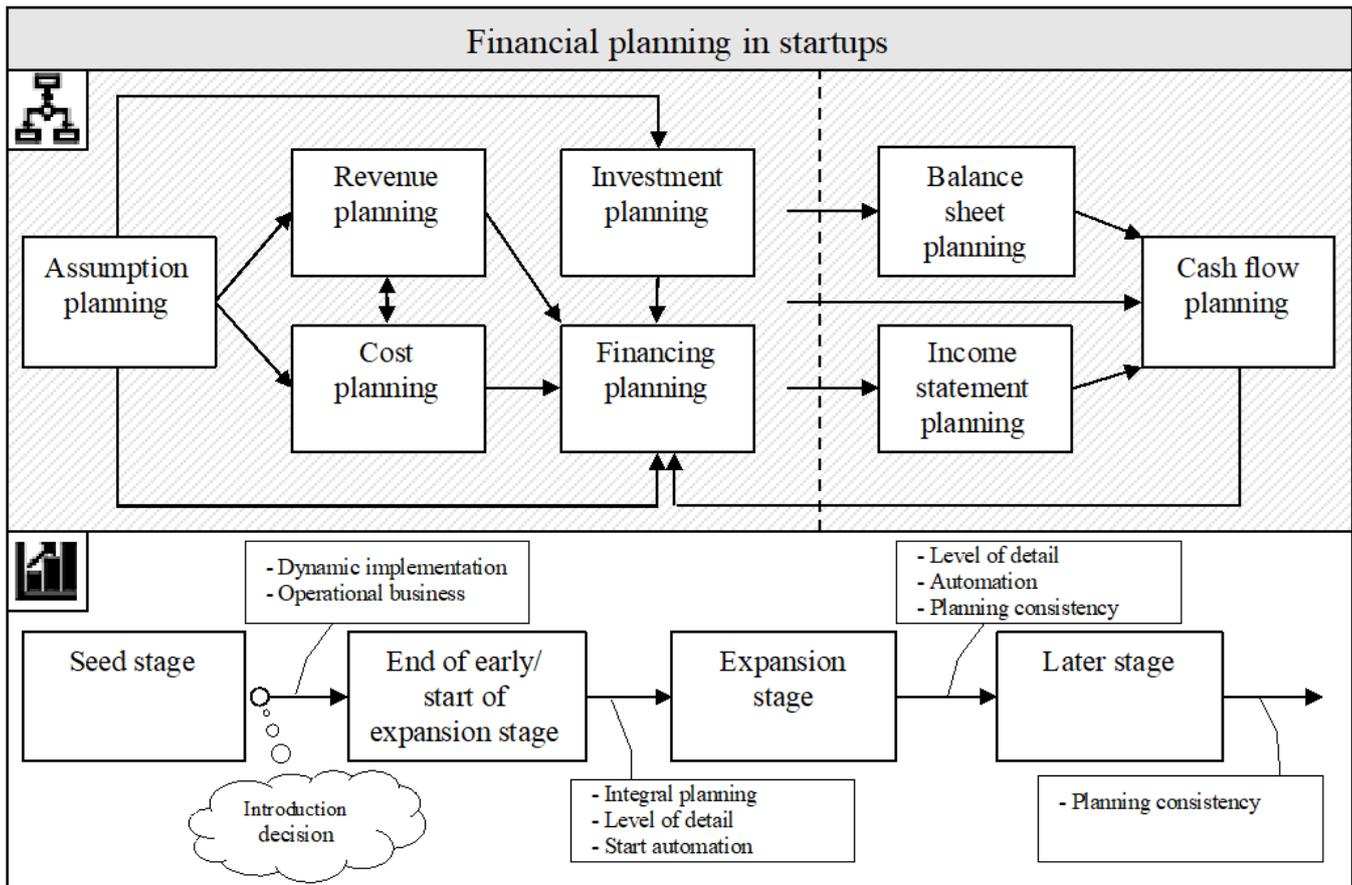[424]Cf. PaaS/SaaS-1, para.16.

Figure 7: Financial planning in startups*

*Own illustration.

the expansion stage. PaaS/SaaS-5 emphasizes in this context that financial planning at the beginning *"must be sufficient [...] so that you can make good decisions and get a good picture of how things look in terms of cash."*[425] Thus, the cash flow planning represents the essential instrument of the startups, especially at the beginning, to avoid illiquidity and secure the continuity of the company. PaaS/SaaS-1, as a startup from the expansion stage, further criticizes long-term planning because *"the world, markets, and business are now moving so fast [...] that planning more than 24 months into the future makes no sense."*[426] EComm-1, as a later stage startup, agrees and adds that *"a five-year plan [...] is necessary for the long-term focus, but as you look further ahead, the results become more volatile."*[427] Accordingly, the focus in the expansion and later stage is also on detailed short-term planning.

In the lower section of Figure 7, the planning-specific development steps between the stages are illustrated. The planning at the end of the early stage and at the beginning of the expansion stage is implemented more dynamically than

in the seed stage to enable the quick mapping of the consequences of individual measures and to make decisions based on this. Furthermore, a stronger focus is placed on the correct planning of the operative business, so that accruing revenues and costs can be planned as accurately as possible in view of the cash flow. Towards the expansion stage, increased attention is paid to more integral planning which takes the increasingly complex corporate structure into account, in order to carry out cross-company planning. Furthermore, planning becomes much more detailed in view of the higher sales and expanded corporate structure, thus the automation of planning is initiated to also ensure its later manageability. From the expansion stage to the later stage, the level of detail in the planning is further increased significantly in view of a possible IPO. Due to consolidation issues, the automation of planning is further advanced, thus drivers or queries from the ERP system are used to automate the planning. Moreover, greater emphasis is placed on consistent planning with uniform annual parameters to ensure comparability. The development of planning consistency is afforded particular focus even beyond the later stage.

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[425] PaaS/SaaS-5, para.30.
[426] PaaS/SaaS-1, para.18.
[427] EComm-1, para.9.

4.2. Implementation of cost accounting

The second main subject of investigation in this thesis, according to the research question, is cost accounting. In the following, the results on the implementation of cost accounting in the development phases examined are presented. In a subsequent summary, the main findings on the implementation of cost accounting are described and the main development steps along the phases are outlined.

4.2.1. End of early stage/ start of expansion stage

Similarly to financial planning, the results of the implementation of cost accounting in the startups from the end of the early stage and the start of the expansion stage are presented collectively. The reasons for this are the same as those in the financial planning section, namely the similar implementation and the overlapping phase classifications from the startups examined from these two phases.

In terms of the basic decision to introduce cost accounting, it is notable that all startups have established fundamental cost accounting in their company. The initial implementation should already occur in the seed stage according to EComm-3 and PaaS/SaaS-2.[428] This timing is motivated by two main triggers, which are illustrated in Figure 8.

The first trigger for the introduction of cost accounting is financial planning. As previously outlined, the planning of costs constitutes an essential aspect of financial planning, for which an overview of the incurred costs is indispensable. Accordingly, PaaS/SaaS-5 justifies the introduction of cost accounting with the knowledge "*that [cost accounting] is part of financial planning and brings important insights later. Above all, however, also to be able to calculate target ratios such as customer acquisition costs [. . .] or cash flow.*"[429] PaaS/SaaS-1 further stresses "*that [financial] planning is ultimately only as good as the execution, and this is automatically accompanied by cost accounting.*"[430] A second trigger for the implementation of cost accounting involves the improvement of transparency. EComm-5 accentuates in this context that cost accounting provides information on "*whether the product you are selling is profitable and how profitable it is.*"[431] EComm-1 concurs with EComm-5's statement and justifies the integration of cost accounting as a "*means to an end, [. . .] [to] make costs transparency.*"[432]

The implementation of cost accounting by the startups from the end of the early stage and the beginning of the expansion stage occurs in a very rudimentary manner. Five of the six startups examined from these stages have merely implemented cost element accounting, which is intended to provide a sound overview of the incurred costs. PaaS/SaaS-5, for instance, distinguishes between "*telecommunication costs, hosting, tax advice, legal expenses [. . .], personnel costs

[etc.]*"[433] and lists these monthly. Therefore, the necessary data basis is provided by the actual costs from the respective financial accounting systems.[434] The startups justify the lack of need for distinctive cost accounting with the manageable costs and their company size:

> "*So, we don't have a cost center or anything like that now, but it's just the rudimentary costs that are incurred. Later, in another stage of expansion of the company, this [. . .] must take on other professionalism.*"[435]

> "*For the moment, it is not necessary to be more detailed, since it would not provide any new insights, except that it would cost time.*"[436]

> "*What we do in the field of cost accounting? We are still too small right now, I can still calculate everything in my head, I don't need explicit cost accounting.*"[437]

> "*It's very simple, as I just said. So, you can do cost accounting in a complex way, but it depends on the size of the company and what you're doing.*"[438]

> "*If the number of products increases, I think we will have to implement a proper cost accounting. Right now, that is not necessary.*"[439]

As the only startup from the end of the early and the start of the expansion stage, PaaS/SaaS-4 has already integrated cost center accounting into the company, consisting of four cost centers (operational-, product-, financial service-, and human resource service cost center). Here, the operational cost center contains the costs of the current business activity such as "*office expenses [. . .], personnel [costs], [. . .] notary costs or legal costs.*"[440] The financial service and human resource service cost centers capture the costs incurred for the two offered services, and each deals with "*what it costs [PaaS/SaaS-4] to deliver this [service].*"[441] Finally, the product cost center includes the costs incurred for product development, which "*mainly [comprises] personnel and freelancer costs.*"[442] PaaS/SaaS-4 justifies this early further subdivision by means of the very experienced team and the financial service offered.[443]

In the area of partial cost accounting, PaaS/SaaS-5, PaaS/SaaS-3, and EComm-4 have implemented a break-even analysis as a further cost accounting instrument. PaaS/SaaS-5 and PaaS/SaaS-3 justify the choice of a break-even analysis

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[428]Cf. EComm-3, para.37; PaaS/SaaS-2, para.38.
[429]PaaS/SaaS-5, para.42.
[430]PaaS/SaaS-1, para.40.
[431]EComm-5, para.26.
[432]EComm-1, para.37.

[433]PaaS/SaaS-5, para.32.
[434]Cf. ibid., paras.37f.; EComm-5, para.28; EComm-4, para.4; PaaS/SaaS-2, para.48.
[435]PaaS/SaaS-5, para.34.
[436]Ibid., para.50.
[437]PaaS/SaaS-3, para.39.
[438]PaaS/SaaS-2, para.42.
[439]EComm-5, para.26.
[440]PaaS/SaaS-4, para.36.
[441]Ibid..
[442]Ibid..
[443]Cf. ibid., para.38.

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│      Triggers for the introduction of cost accounting │
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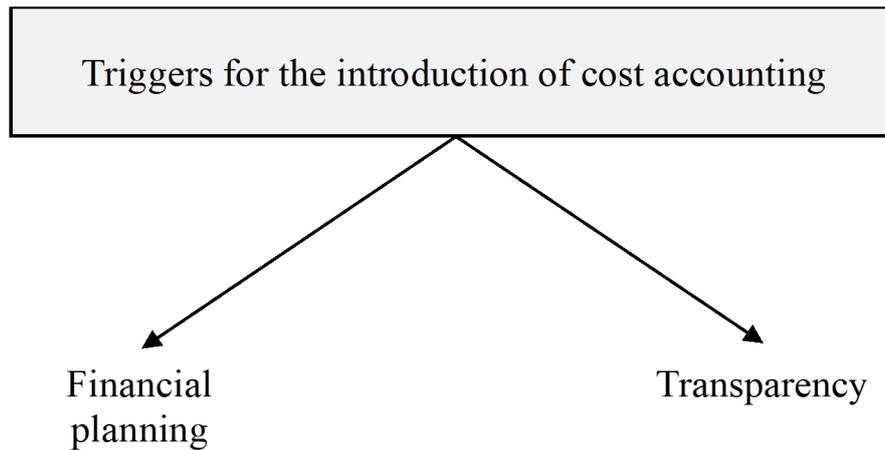```

Financial
planning

Transparency

**Figure 8:** Triggers for the introduction of cost accounting*

*Own illustration.

with the corporate goal of profitability, to determine the point at which the revenues are equal to costs. For this purpose, PaaS/SaaS-3 has not set up an explicit tool for break-even analysis but derives the break-even point "*from the timeline in income statement [. . . ] at which point the result switches into the positive.*"[444] With regard to contribution margin accounting, PaaS/SaaS-5 emphasizes that in a SaaS business model, no products exist where variable costs are deducted to find out if a product is even profitable to produce.[445] The service provided is developed and further maintained or improved, but cannot be compared with a manufacturing company, since "*a digital company usually has very few variable costs.*"[446] Therefore, only PaaS/SaaS-5 considers the contribution margin, without explicitly focusing on it.

For the next development step, EComm-5 and PaaS/SaaS-3 have already started to build up cost centers, which will be used to implement a cost center accounting in the subsequent expansion stage of the company.[447] Moreover, PaaS/SaaS-2 is striving to integrate a project-related cost post-calculation "*to see whether the [planned] costs have actually occurred in this way.*"[448]

4.2.2. Expansion stage

In the expansion stage, the growth of the startup and the resulting more extensive and complex corporate structure lead to a broader cost accounting system. Since costs in this development stage can no longer be monitored and made transparent by using a single cost element approach, EComm-3 and PaaS/SaaS-1 have also implemented distinctive cost center accounting. PaaS/SaaS-1 states at this point that "*growing along [with cost accounting] is a great challenge,*

since going ahead [. . . ] with too many steps [. . . ] overloads the employees with administrative work.*"[449] The cost center structure of the two startups is subdivided in accordance with a functional company view by operational departments.[450] This functional splitting of the cost centers offers the advantage of reviewing the planned cost framework of the respective departments in financial planning. EComm-3 differentiated this cost structure hierarchically. Therefore, the main cost center operation is divided into the cost centers logistics and installation, for instance, or another main cost center growth is assigned to the cost centers sales and marketing.[451] This cost center structure is documented in a cost center plan, ensuring that the vouchers from the financial accounting system are booked as accurately as possible to the appropriate cost center with the incurred cost elements.[452] The usual distinction between direct and overhead costs, so that the latter can be allocated to the respective cost centers, is not applied in this context; thus, all incurred costs are allocated to the corresponding cost centers and the subsequent cost object accounting is not carried out.

With project cost accounting, EComm-3 has integrated a second cost dimension besides the functional view.[453] Project cost accounting involves a post-calculation "*to see which projects bring how much margin with them*"[454] and was initiated on instruction of the capital providers.[455] The investors criticized here that the functional dimension frequently does not consider the booked project-specific "*material orders, [. . . ] revenues [. . . ] or partner installation [costs]*"[456] in the same period, since "*the material order [. . . ] must occur sooner*

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[444]PaaS/SaaS-3, para.45.
[445]Cf. PaaS/SaaS-5, para.36.
[446]PaaS/SaaS-3, para.39.
[447]Cf. ibid.; EComm-5, para.28.
[448]PaaS/SaaS-2, para.48.

[449]PaaS/SaaS-1, para.40.
[450]Cf. ibid., para.32; EComm-3, para.41.
[451]Cf. EComm-3, para.41.
[452]Cf. ibid..
[453]Cf. ibid., para.39.
[454]Ibid..
[455]Cf. ibid., para.51.
[456]Ibid..

*[. . . ] than the partner installers issue their invoice*"[457], and thus does not provide the necessary transparency. Consequently, the voucher for a material order is not only booked to the purchasing cost center, but also to the specific project for which the order was executed.[458] The employees book their project-specific time expenditure via time recording to the project, thus enabling a corresponding post-calculation with all revenues and costs after completion of the project.[459] Accordingly, EComm-3 uses this project cost accounting to implement cost object accounting on a project basis.[460]

Based on the project cost accounting, EComm-3 has implemented a multi-level contribution margin accounting. Here, the project cost data recorded in Datev are evaluated in Excel and calculated down to the contribution margin III as shown in Table 5. For this purpose, the material costs are first subtracted from the project revenue to calculate contribution margin I, before the partner installation costs and finally the sales and marketing costs are deducted to obtain contribution margin III.[461] For the sales and marketing costs, a lump sum is applied.[462] By means of this contribution margin accounting, EComm-3 examines and analyzes the individually listed positions regarding deviations from the average as part of the post-calculation.[463]

PaaS/SaaS-1 has so far not implemented any partial cost accounting instruments but emphasizes that instead, much is calculated with cost metrics, such as "*acquisition costs in relation to sales or in relation to the amortization.*"[464] These metrics provide an understanding of the company's "*risk ranges, [. . . ] so that, for example, a customer that amortizes its [acquisition costs] only after 24 months carries a very high company risk.*"[465]

The next development step, according to EComm-3 and PaaS/SaaS-1, involves a further adjusted growth of cost accounting to the enterprise.[466] Here, EComm-3 aims to achieve a "*more performant database [for cost accounting] that is easier to share within the company*"[467] as the next step.

#### 4.2.3. Later stage

Even in the later stage, the fundamental process of full cost accounting follows that of the expansion stage. However, the startups in the later stage make a further distinction in cost accounting according to their respective established business models.[468] Specifically, EComm-1 differentiates between the basic e-commerce business and the recently integrated PaaS-specific business model.[469] In contrast,

EComm-2 distinguishes between the B2B and B2C-specific e-commerce business models.[470] EComm-2 furthermore makes a country-specific differentiation in addition to the business models as part of its international operations and locations.[471] After the previous business model and country-specific distinction, the later stage startups also carry out a cost element and cost center accounting. The cost centers represent the respective company departments to "*monitor which costs are incurred in which departments*"[472] and, based on this, to conduct "*a comparison of planned and actual costs.*"[473] Therefore, the allocation of the incurred cost elements from the financial accounting system to the functional cost centers, occurs on a country and business model-specific basis through an ERP system. EComm-1 emphasizes in this context that potentially "*two business models can converge in one cost center [. . . ] which however can be separated by means of the data flow.*"[474] Therefore, even the startups examined in the later stage allocate the costs completely to the corresponding cost centers without performing subsequent cost object accounting. Both EComm-1 and EComm-2 evaluate this cost accounting method as sufficient.[475] EComm-2 further emphasizes that "*we are not a production company, we are a pure retailer and in essence the cost accounting system is to look at where the gross profit comes out in the corresponding business case.*"[476] The cost center accounting thus provides a good overview of the cost distribution in the individual departments, but the "*cost and performance control comes rather via daily business analytic reports [in which] it is checked how much revenue we have made that day, what is the gross profit margin [. . . ], how is the business situation.*"[477] Building on these business analytics reports with included real-time data, EComm-2 initiates measures in case of deviations from the plan, without deeper consideration of cost element and cost center accounting.[478] EComm-1 also underlines that the focus is rather on the creation of future automated management reporting which serves as a basis for planning measures and making decisions, to which cost accounting is fundamental.[479] Cost accounting therefore represents a "*means to an end*"[480] for EComm-1.

In the area of partial cost accounting, no results were found. However, in view of the profitability objectives of the later stage startups, it can be assumed that both startups have at least implemented a break-even analysis.

As a further development step in the field of cost accounting, EComm-1 envisions the integration of additional cost centers as the company continues to grow.[481] However, the

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[457]EComm-3, para.51.
[458]Cf. ibid., para.39.
[459]Cf. ibid..
[460]Cf. EComm-3, para.43.
[461]Cf. ibid., para.39.
[462]Cf. ibid., para.43.
[463]Cf. ibid., para.39.
[464]PaaS/SaaS-1, para.34.
[465]Ibid..
[466]Cf. ibid., para.40; EComm-3, para.55.
[467]EComm-3, para.55.
[468]Cf. EComm-1, para.31; EComm-2, para.38.
[469]Cf. EComm-1, para.13; EComm-1, annual report 2020.

[470]Cf. EComm-2, para.4; EComm-2, annual report 2020.
[471]Cf. EComm-2, para.38.
[472]Ibid..
[473]Ibid., para.42.
[474]EComm-1, para.37.
[475]Cf. ibid.; EComm-2. para.38.
[476]EComm-2, para.38.
[477]EComm-2, para.38.
[478]Cf. ibid., para.40.
[479]Cf. EComm-1, para.39.
[480]Ibid., para.37.
[481]Cf. ibid..

**Table 5:** Contribution margin accounting of EComm-3*

| Contribution margin accounting of EComm-3 | |
|---|---|
| | Project revenue |
| — | Material costs |
| **=** | **Contribution margin I** |
| — | Partner installation costs |
| **=** | **Contribution margin II** |
| — | Sales and marketing costs |
| **=** | **Contribution margin III** |

*Own illustration.

focus is basically more on reporting, so that both startups in the later stage are focused on the further expansion and automation of reporting to enable faster and better analyses and decision making.[482]

4.2.4. Summary

In summary, the results show that all startups have implemented cost accounting, even if only in a very rudimentary manner. The introduction point of cost accounting in startups is the seed stage, so that the startups can verify the set-up costs in the financial planning and adjust them if necessary. However, in contrast to financial planning, no uniform implementation process could be identified for cost accounting by the startups examined. Nevertheless, phase-specific development steps could be identified, which are illustrated in Figure 9.

Cost accounting is still conducted in a very rudimentary way towards the end of the early and the beginning of the expansion stage. Here, the startups merely list the incurred cost elements without making any further allocations. PaaS/SaaS-5 emphasizes that this overview of the cost elements is sufficient *"and more detail is not necessary [in these early stages], since it would not provide any great new insights, except that it costs time."*[483] Considering the still manageable number of employees and departments, this cost overview provides the necessary transparency without a further subdivision. As the only startup from the end of the early and the beginning of the expansion stage, PaaS/SaaS-4 has already established four cost centers for further cost allocation. PaaS/SaaS-4 justifies this early subdivision with the very experienced team and the financial service it offers.[484]

Towards the expansion stage, cost centers are established due to the growth of the company and its increasingly complex corporate structure. The cost centers are subdivided according to the functional corporate structure, thus the vouchers with the cost elements from the financial accounting system are booked to the corresponding department. The subdivision according to the functional company view offers the advantage that the planned, department-specific costs from the financial planning can be matched with the actual costs incurred per department. A further distinction by cost object is not applied because of the digital business model, so that all occurring costs are booked to the respective cost centers. EComm-3 has also established a further, investor-driven cost accounting dimension in which all project-specific incurred expenses are booked to the specific project in addition to the functional booking.[485] This project cost accounting corresponds to a cost object accounting and is used for the post-calculation of the planned project budget.

Towards the later stage, further cost centers are integrated according to the functional view of the company and the level of detail is increased, so that a further differentiation according to the business models and countries occurs. Even in the later stage, cost object accounting is not applied. EComm-1 and EComm-2 justify the complete cost allocation to the corresponding cost centers by means of an ERP system as sufficient due to the digital business model.[486] EComm-2 further states in this context that *"essentially it is looked at [...] where the gross profit comes out in the corresponding business model"*[487] and daily automated business analytic reports are applied for this purpose. Therefore, besides the introduction of further cost centers in the case of continued growth, the advancement of automated reporting as a basis for decision-making will be pursued even after the later stage.

In the area of partial cost accounting, strong differences among the startups can be observed. Only PaaS/SaaS-5, PaaS/SaaS-3 and EComm-4 stated that they have integrated a break-even analysis as a partial cost accounting tool into their company. However, it should also be mentioned at this point that EComm-1, EComm-2 and PaaS/SaaS-4 could not be interviewed about partial cost accounting due to time constraints. In view of the reason given by PaaS/SaaS-5 and PaaS/SaaS-3 for the introduction of a break-even analysis, namely to check the company's profitability target, it can be assumed that EComm-1 and EComm-2, as later-stage startups with profitability targets, have also implemented a

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[482]Cf. EComm-1, para.39; EComm-2, para.52.
[483]PaaS/SaaS-5, para.50.
[484]Cf. PaaS/SaaS-4, para.38.

[485]Cf. EComm-3, para.39.
[486]Cf. EComm-1, para.37; EComm-2, para.38.
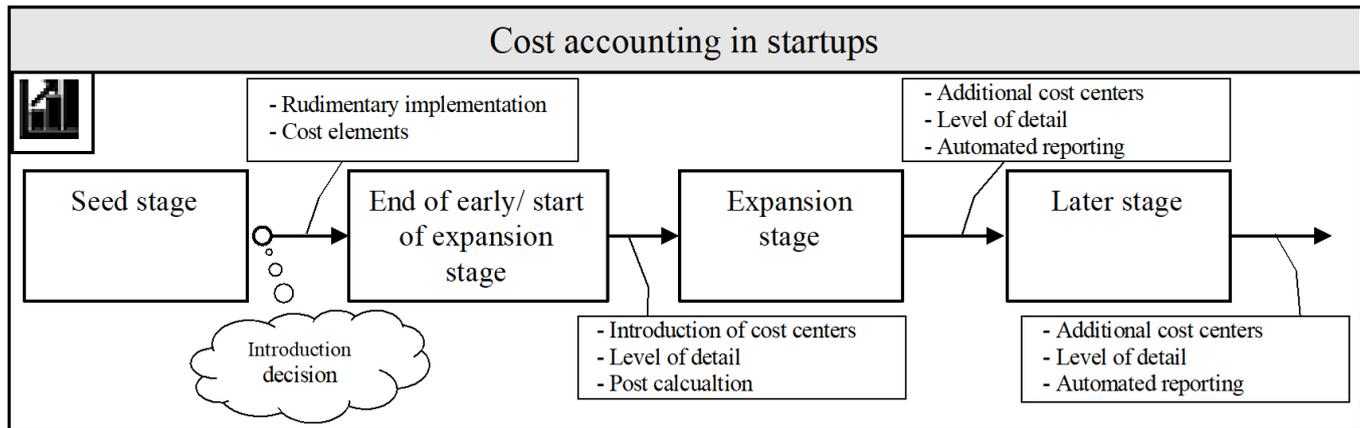[487]EComm-2, para.38.

**Figure 9:** Cost accounting in startups*

*Own illustration.

break-even analysis. The only startup examined that consciously uses contribution margin accounting is EComm-3. The instrument of contribution margin accounting was broken up by EComm-3 and modified for the company-specific purpose. PaaS/SaaS-1 supports this approach and emphasizes that *"you have to break up the theoretical constructs to make them usable for the corresponding case."*[488]

## 5. Discussion

This study was conducted to investigate the implementation of financial planning and cost accounting instruments in startups, depending on their development stages. For this purpose, semi-structured interviews with executives from startups of different development stages, industries, and sizes as well as an external expert were conducted to ensure a heterogeneous database.

In the first part of this thesis, the implementation of financial planning along the development phases was analyzed. The results indicate a strong contrast between the startups examined from the end of the early and the start of the expansion stage regarding the fundamental decision to introduce financial planning. The findings suggest that the underlying form of financing influences the decision to adopt financial planning: bootstrapped startups introduce financial planning at the outset less frequently than venture capital-backed startups. This result is consistent with Davila and Foster's finding that bootstrapped startups often introduce MCSs, such as financial planning, later in their development.[489] Davila and Foster explain the earlier adoption point of venture capital-backed startups with their often negative cash flow and thus the necessity to evaluate the impact of expenditures as part of the financial planning and to determine the cash runway

in order to prevent illiquidity.[490] In line with Davila and Foster's explanations, the results of this thesis indicate that bootstrapped startups tend to focus their attention on the operational expansion of the company. In the earlier stages of development, therefore, the business evaluation of the tax advisor and the certainty of a positive cash flow prove to be sufficient in the area of financial management.

Second, the results reveal a consistent approach among the startups to the fundamental implementation of financial planning irrespective of their development stage or associated industry. Here, the startups initially carry out assumptions and objectives planning, upon which the revenues, costs, investments, and the necessary financing to achieve these objectives are planned. Using this as a planning basis, the three main planning components, consisting of the balance sheet, income statement and cash flow, are planned by all startups, as illustrated in Figure 7 in section 4.1.4. This uniform approach to financial planning along the development stages, without considering the level of detail and implementation of the individual planning instruments, is in line with expectations and is also consistent with Gansel's information flow model of financial planning for newly founded companies from section 2.3.2.1.[491] An explanation for this result lies in the creation of the necessary planning transparency for internal and external stakeholders. With the aid of this planning scheme, the startups can disclose the figures and composition of the individual items of the balance sheet, income statement, and cash flow in detail and thus make them more comprehensible and justifiable for the stakeholders. Furthermore, this approach offers the basis for a dynamic financial planning perspective, as already carried out by the startups during their initial planning implementation. Consequently, the effects of changes in the basic planning, such as in costs, on the other basic planning elements as well as on the balance sheet, income statement

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[488]EComm-3, para.34.
[489]Cf. Davila & Foster, 2007, pp.918ff..

[490]Cf. ibid., p.921.
[491]Cf. Gansel, 2005, p.7.

and cash flow can be identified on a formula basis. A dynamic design according to this approach thus serves on the one hand as an instrument for evaluating potential decisions with regard to effects on the company's financial structure, and on the other hand as an instrument for performing various scenario analyses.

Regarding the timeliness of planning, the results similarly show that startups conduct both short-term and long-term financial planning regardless of their development stage. Long-term planning serves the company's strategic orientation and is particularly interesting for the investors to assess the value increase of the startup in view of a future exit. Due to the high degree of uncertainty in long-term planning, resulting from the continuously changing market and competitive conditions, and the high growth rates, the focus of the startups lies on short-term planning along all development stages. This result is consistent with the findings of Granlund and Taipaleenmäki, namely that "especially due to high environmental uncertainty, the time scope of planning in [new economy firms] is typically so short that long-term strategic financial planning deserves limited attention."[492]

Besides the fundamentally uniform financial planning approach, the results show development stage and industry-related commonalities and differences in implementing the individual planning instruments in the third step.

In the assumptions and objectives planning, which form the basis of planning, the results indicate an initially uniform approach of the startups. This planning step occurs in all startups with a top-down approach by the management and the investors. Operative initiatives are only included in the planning of short-term objectives in the later stage. An explanation for the linkage of the top-down and bottom-up approach in the later stage lies in the very large and complex corporate structure of the startups from this development stage with several business models and international locations. Consequently, the planning top line usually has detailed information about the market and competitive developments, but also information deficits about operational potentials and restrictions. Therefore, this information enters the planning process in a bottom-up approach alongside the market and competition analysis, to increase planning accuracy and thus achieve a more realistic future picture of the company. This dual approach is not yet necessary for the interviewed startups from the early and expansion stage, since the management can still oversee the operational business despite the growing corporate structure. Nevertheless, this dual perspective is also relevant for startups, especially from the expansion stage, with an already very large corporate structure and several business models or international locations, to consider the operational potentials and restrictions still adequately in the planning. In this respect, the need for MCSs to ensure an adequate information flow along the company hierarchies becomes apparent once again.

As regards revenue planning, the results reveal differences in implementation according to different development phases, revenue volume and industry. The startups from the end of the early and the start of the expansion stage frequently plan their revenues based on an investor-driven bottom-up approach. Here, the startups project their revenues based on marketing indicators such as the conversion rate or the customer lifetime value, ratios such as the marketing effort to revenue ratio, or the existing and planned contracts with customers for business models with very few customers. This procedure is in line with the expectations, as there are few historical values at the end of the early and the start of the expansion stage which can be used to derive revenues from existing and planned market shares in a top-down approach. In the expansion and later stage, the results indicate a top-down revenue planning, where the revenues are planned from the targeted market share or determined by a fixed revenue volume. The startups examined justified this approach with their high revenue volume and existing historical values. Accordingly, it can be concluded that startups in the expansion stage with low revenue volumes and few historical values also regularly use a bottom-up approach for revenue planning. Based on this top-down revenue planning, the necessary number of orders or customers is determined by key figures such as the average order volume in e-commerce or the average customer lifetime value in the PaaS/SaaS-specific area. The results from the expansion stage also show that startups with a business model with few customers (as is often the case in the PaaS/SaaS-specific B2B area) also use a bottom-up approach in addition to the top-down approach for short-term revenue planning. This enables detailed planning of the revenues from existing customers through contracts and the execution of business cases for the revenues of planned customers. This procedure is also in line with expectations since the few but more valuable customers allow more accurate revenue forecasts in a bottom-up than in a top-down approach, and therefore the short-term future can be better depicted in this way.

Furthermore, the findings from the revenue planning indicate industry-specific differences in planning. Here, PaaS/SaaS startups from the B2B area mainly operate with recurring revenues and use customer-based figures for planning, such as the average customer lifetime value or existing and planned contracts with customers. Conversely, e-commerce startups mainly operate with non-recurring revenue models and use order-based figures such as the average order volume or the average order value per good to plan the necessary sales.

In terms of cost planning, the results show that the startups from the end of the early and the start of the expansion stage plan their costs independently of departments in terms of a manageable cost block. This manageable planning is attributable on the one hand to the cost structure in digital business models with many fixed and few variable costs and on the other hand to the still small size of the company in this stage. A further reason is the fact that company departments, which are closely linked to the company size, are not yet explicitly integrated and defined, thus not requiring detailed planning of departmental budgets. In the expansion stage,

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[492]Granlund & Taipaleenmäki, 2005, p.35.

the cost planning is much more detailed and department-dependent because of the further increase in the company size and the more complex company structure. Here, the first planning automation is partially integrated based on the sales planning, for example through cost drivers, which allow the planning of department-specific costs. This planning automation is justified by the rapid growth and the associated higher planning effort, ensuring that planning remains manageable even in the subsequent expansion of the company. Accordingly, the results reveal that cost planning in the later stage is fully automated via, for instance, the further expansion of department-specific cost drivers or via queries from the ERP system.

In the final two components of basic planning, investment and financing planning, the planning is primarily based on the assumptions and objectives planning of the management and investors in all startups. Differences between the development stages result from the type and the volume of investments and financings.

The results suggest that the investment volume increases along the development stages due to the large and sustained growth of the startups, resulting in necessary investments in larger office space or new locations. At the end of the early and the start of the expansion stage, this investment volume is still limited due to the quantitively smaller financing rounds, thus investments are primarily made in the further development of the offered product or service. In the expansion stage, investments are made in the scaling of the business model, thus higher investment volumes are already made in the development of new product variants, new office space, and, if possible, entry into new markets. In the later stage, the investment volume is significantly higher again, so that the management plans investments in new, possibly international, locations, warehouses, or the development and establishment of new business models.

The financing plan depends on all previously considered plans, thus the necessary resources for executing these plans are projected here. The results show, in accordance with the theoretical foundations, that financing planning in the early and expansion stage occurs through bootstrapping or venture capital with a typical cycle of 12 to 18 months. In the later stage after the IPO, the financing planning is carried out via the issuance of shares to investors or often also via the company's positive cash flow.

Building on the instruments of the basic planning, the results reveal that all startups use the dynamic design of the planning to formally project the balance sheet, income statement, and cash flow. The focus of the startups lies, in accordance with Davila and Foster, in particular on the cash flow planning to determine the cash runway and thus the latest point in time for a follow-up financing round to avoid illiquidity.[493]

Finally, the results indicate phase-specific development steps in the implementation of financial planning. Towards the end of the early and the start of the expansion stage, particular attention is paid to dynamic implementation with an accurate depiction of the operating business. As part of the dynamic design, the interdependencies and interrelationships of the individual planning instruments are presented in a formula-based manner to enable the rapid mapping of the consequences of individual measures and decision-making. Ensuring a realistic presentation of the operating business primarily relates to short-term financial planning, whereby the accruing revenues and costs for the upcoming months are projected as closely as possible to the period to enable the correct presentation of the cash flow. Towards the expansion stage, planning becomes much more detailed and comprehensive. Here, the findings show that planning is carried out across the company on a departmental basis. In order to manage this planning effort and ensure future manageability, the first planning automation is included. Towards the later stage, the level of detail is again significantly increased due to multiple business models and international locations, so that planning can only be managed through further automation. Another focus is on planning consistency, to make the planning more comparable and transparent for stakeholders. The results suggest that the expansion of planning consistency continues even after the later stage. The identified development steps between the development stages correspond to the expectations. Given the increasing planning complexity, as the company grows, there is still a need to automate planning in order to maintain the planning's accuracy and transparency, so that the identified development steps correspond to this expectation.

In the second part of this thesis, the implementation of cost accounting along the development stages was analyzed. The first finding here is that all startups have integrated cost accounting, but the implementation remains rudimentary in the earlier development stages. In this regard, the startups pursue the objective of enhancing the transparency of the costs to enable, for instance, target-actual comparisons with the planned costs without delving into the details. This implementation is consistent with the finding of Granlund and Taipaleenmäki that cost accounting generally receives less attention in new economy firms than financial planning.[494] This is primarily caused by the digital business model of the startups: especially in the PaaS/SaaS segment, the incurred costs, consisting primarily of personnel, are difficult to allocate to a single service for a customer. Conversely, the required time for such cost accounting makes the effort-benefit ratio disproportionate, and the startups therefore refrain from implementing cost accounting down to a single cost object. In the e-commerce segment, the startups generally act as retailers, thus the goods sold are not manufactured in-house but rather purchased ready-made and subsequently resold with a margin adjusted to the respective market. Consequently, the model of classic cost accounting as used in medium-sized production companies does not apply either in this case.

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[493]Cf. Davila & Foster, 2007, p.919.

[494]Cf. Granlund & Taipaleenmäki, 2005, p.34.

Second, in contrast to financial planning, the startups do not pursue a uniform approach to cost accounting along the development stages, but rather different procedures depending on the company size. Here, the startups from the end of the early and start of the expansion stage summarize the incurred cost elements without splitting them further. This rudimentary cost accounting procedure can be explained by the cost planning approach at the end of the early and the start of the expansion stage, where only the individual cost elements are planned independently of the departments. Thus, this cost overview supplies the necessary transparency to carry out target-actual comparisons with the planned costs. Towards the expansion stage, the level of detail of cost accounting increases significantly, resulting in the establishment of cost centers in line with the functional company view, where the incurred cost elements are fully booked according to their origin. This procedure can be explained by the company's size: a simple overview of cost elements becomes insufficient for transparent cost accounting as the volume of costs increases with the size of the company and the complexity of its structure. Consequently, as in cost planning, the costs incurred are booked to the corresponding departments to enable target-actual comparisons with the planned costs and, if necessary, to adjust the plan. In the same way, cost accounting is also carried out in the later stage, with a further increase in the level of detail, by differentiating between business models and the country-specific perspective. However, the results show that the cost and performance control of the startups from the later stage is more frequently carried out via automated business analytic reports, where cost accounting forms the basis, but is seen by the startups themselves as a means to an end. The level of detail of cost accounting and the automated reporting for cost and performance control continues to be driven forward even after the later stage.

Furthermore, the results show that cost object accounting is occasionally established in startups in the context of post-calculations of project budgets. Here, project-specific expenses are booked to the project in addition to the cost center. Moreover, the employees working on a specific project book their time to the project to ultimately check compliance with the budget after certain milestones or completion of the project. Consequently, cost object accounting is not entirely unimportant for startups, but generally plays a rather subordinate role.

Finally, the results in partial cost accounting suggest that especially startups with the objective of profitability integrate a break-even analysis. This result is in line with the expectation, as the break-even analysis serves to investigate profitability and therefore represents a suitable instrument for these startups. Regarding contribution margin accounting, the results indicate that startups tend to integrate this partial cost accounting instrument less frequently. Here, the contribution margin accounting is split according to the company-specific purpose for appropriate comparisons of specific product or project costs from the average costs. Due to time restrictions during the interviews, less attention was paid to the partial cost accounting, thus the completeness of the findings cannot be guaranteed.

Overall, it can be concluded regarding a comparison of the implementation of financial planning and cost accounting that the implementation of financial planning in startups along all development stages is significantly more mature and detailed than cost accounting and generally perceived as a more important instrument by startups. This finding is consistent with Davila and Foster's quantitative result that financial planning is the earliest and most frequently adopted MCS category by startups and thus holds the greatest importance for startups.[495]

Finally, the results suggest that the necessity of human resource MCSs for establishing formal communication along the company hierarchies arises in the expansion stage when exceeding a certain company size. These MCSs are especially important for financial planning, ensuring that all employees are informed about objectives and budget restrictions and operate accordingly. This result is consistent with Davila's findings that human resource MCSs are crucial for regulating the growth of startups.[496]

When interpreting the results of this thesis, further limitations should be kept in mind besides the previously described restrictions of partial cost accounting. During the data analysis, the reliability of the data was not tested, meaning that the data were not coded again by an independent second party and checked for agreement. Thus, the reliability of the data can only be assumed. Since only one interview was conducted with each startup, only a few factors influencing the implementation of financial planning and cost accounting instruments could be examined. When interpreting the results, it should be noted that, besides the structural organizational factors examined, there are additional influences from the organizational environment, such as market and competitive considerations, which were not in the focus of this thesis. Furthermore, it is important to note that a limited number of interviews were conducted. Especially within the expansion and later stages, only two startups were interviewed in each case, and therefore the results should not be generalized in a statistical sense. Instead, the results of this study should be understood as the first of their kind with regard to the qualitative analysis of the implementation of MCSs, using the example of financial planning and cost accounting, depending on the development stages of the startups.

## 6. Conclusion

The aim of this master's thesis was to answer the research question of how financial planning and cost accounting instruments are implemented in startups, depending on their development stages. For the investigation of this question, eleven semi-structured interviews were conducted with executives from startups in different development stages and industries, as well as with an external expert.

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[495]Cf. Davila & Foster, 2007, p.934.
[496]Cf. Davila, 2005, p.227.

The analysis of the interviews revealed that startups follow a uniform approach when implementing financial planning along the development stages. This planning process involves, in the first step, the planning of short and long-term assumptions and objectives of the management and the investors. Subsequently, the revenues, costs, investments, and necessary financings are planned based on these assumptions and objectives. Building on this planning basis, a dynamic planning process across all development stages is used to set up the three main planning components, consisting of balance sheet, income statement and cash flow, in a formula-based manner. Apart from this uniform approach, the results show that these individual financial planning instruments differ in their implementation and level of detail between the development phases. Here, the identified differences in the implementation are associated with the company size, the business model expansion, and the respective industry of the startups. Finally, fundamental priorities and development steps in the implementation of financial planning between the development stages could be identified. The findings demonstrate that towards the end of the early and the beginning of the expansion stage, the startups examined paid particular attention to a dynamic design of the planning and the appropriate representation of the operating business, without making the planning too detailed. In the expansion stage, planning becomes much more integrated and automated as the company's size increases sharply and the company structure becomes more complex. Finally, in the later stage, as the startups continue to grow and integrate new business models, the findings indicate that the level of detail and automation of planning further increases. Moreover, the results suggest that the later stage startups examined prioritize increasing planning consistency to make plans more comparable.

As regards the implementation of cost accounting, the results show that the startups examined from the end of the early and the start of the expansion stage only differentiate between the incurred cost elements at the beginning due to the still low cost volume. This pure cost element calculation proves to be sufficient initially, as it provides the necessary cost transparency. With growing company size and cost volumes, the level of detail increases in order to ensure cost transparency. Accordingly, the findings show that the incurred cost elements in the expansion and later stage are fully allocated to functional cost centers without further dividing the costs into individual cost objects. The findings further indicate that later-stage startups increasingly use automated business analysis reports for cost and performance control, besides cost element and cost center accounting.

Overall, the results of this thesis contribute to the expansion of the existing literature on MCSs in startups. According to the author's knowledge, this study represents the first investigation of the cross-development-stage implementation of an MCS and a subset of an MCS in startups. Accordingly, this study makes an important contribution to the study of MCSs in startups by examining, for the first time, the link between the already studied influence variables on the adoption and impact of MCSs in startups with the implementation of MCSs.

However, when interpreting these results, the limited number of startups interviewed must be considered; therefore, the results cannot be generalized in a statistical sense. Nevertheless, this limitation also offers potential for future research.

This study offers a first overview of the implementation of financial planning and cost accounting instruments along the startup development stages. It was demonstrated that startups focus their attention on financial planning and consider cost accounting mainly as a support instrument for controlling costs in financial planning. Considering the limited number of interviews, especially in the expansion and later stage, future qualitative studies should further examine the implementation of financial planning with respect to the specific development stages. Moreover, this study has highlighted the need for human resource control systems for formal communication across multiple hierarchical levels. Especially when the company exceeds a certain size, it was found, in line with previous research, that employees in operational hierarchy levels often do not receive information about financial planning. This can result in actions being taken that lead to planning deviations, which could be avoided by improved corporate communication. Future research could investigate the qualitative implementation of human resource control systems along the development stages and elaborate a cross-phase overview of the implementation and necessary development steps. Such an overview would provide a guide for startups in the further development of human resource control systems, and also the opportunity to compare the qualitative implementation of different MCSs between the development stages. Finally, this study offers the link between the previously studied influence variables for integration and the impact of MCSs in startups. Considering the identified phase-specific qualitative differences in the implementation of MCSs, future research could investigate the impact of differences in the implementation of MCSs on the development of startups, for example, in terms of their growth or value

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# The Effect of Entrepreneurs' Gender and Gendered Startup Fields on Organizational Attraction for Potential Applicants

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**Abstract**

Entrepreneurship is growing, and thereby applicants are more often presented with the opportunity to work in a start-up. Simultaneously, a lack of gender diversity in start-up leadership has been reported, and gender stereotyping has manifested itself in the entrepreneurial world. These developments motivate further studies on how potential applicants are attracted to start-ups. In this study, I examine the effect that the entrepreneur's gender and gendered start-up field has on potential applicants' organizational attraction to the company. The present study investigates four fabricated start-ups: 1. Male founder of a technology start-up, 2. Male founder of a sustainable start-up, 3. Female founder of a technology start-up, and 4. Female founder of a sustainable start-up, where participants are randomly selected to reveal through an online experiment their intent to pursue the start-up. Data from 246 prospective graduates, graduates, and young professionals indicates that the start-up field is more valuable when considering one's organizational attraction to a company than the entrepreneur's gender. Unforeseeably, both the female and male participants preferred a sustainable context start-up, but with varying founder gender preferences.

*Keywords:* Entrepreneurship; Gender stereotypes; Applicant recruitment; Organizational attraction.

## 1. Introduction

The global growth of start-ups has rapidly increased over recent years. With the assistance of the pandemic, the entrepreneurship boom has escalated towards a start-up hysteria (Altun, 2021). This results in vastly different entrepreneurial endeavors across all industries with seemingly limitless potential. The appeal of becoming an entrepreneur or a future employee pursuing a career in a start-up remains a viable option for many professionals. Unfortunately, there persists a largely apparent lack of gender diversity in entrepreneurship as a whole, centered on the number of male founders versus female founders of start-ups (Marlow, 2020).

The lack of gender diversity in entrepreneurship can affect both the founders' and applicants' organizational attraction towards start-ups since this exposes how entrepreneurship can be an unequal career option to pursue, depending on one's gender. There is much discussion on where the lack of gender diversity originated in entrepreneurship. Research has suggested that the differing entrepreneurial activ-

ity between men and women could be analogous with gender characterization (Carter, Anderson, & Shaw, 2001; Greer & Greene, 2003; Gupta, Turban, Wasti, & Sikdar, 2009; Marlow, 2002), meaning that the entrepreneurs prescribed gender role may be a hindering factor in the deficit of gender diversity. More specifically, this is referred as "gender stereotypes" which "are shared beliefs about the attributes, personality traits, and abilities of women and men" (Ellemers, 2018, p. 278).

Gender stereotypes are embedded in our everyday lives in many ways, but I would like to focus mostly on the ways gender stereotypes affect potential applicants' organizational attraction to a start-up, and how the founder's gender matched with a gendered start-up field can alter the applicants' intent to pursue. This Master's Thesis investigates if applicants favor a workplace they feel fits (or matches) them since individuals are attracted by similarity, and whether this similarity attraction resonates in their preferred founder gender (Byrne, 1971; Hentschel, Braun, Peus, & Frey, 2020). The lack of gender diversity extending across many fields of leadership, heavily due to gender stereotypes, negatively influences gen-

der equality and calls for change. Therefore, it is critical to understand that gender stereotypes are rooted in society's accepted gender ideology, defined as the regulations that outline the social fabric of the distinctions and dissimilarities that are a part of gender (Ridgeway & Correll, 2004). These gender beliefs have permeated not just in gender stereotypes in entrepreneurship, but also in the way start-up fields are affiliated with being more masculine or feminine based on the typical distribution of gender in the working sector which is more obvious in certain fields rather than in others (Rice & Barth, 2016). Hence, leading to a few of the hypotheses proposed in the study, which will investigate how potential applicants view certain fields established by the predefined masculinity or femininity of the start-up field.

Previous research has in detail expanded upon the factors in start-up fields that make them seem more masculine or feminine. Namely, these factors are credited to the start-up field practices of being perceived as more communal (stereotypically female, feminine behaviors) or agentic (stereotypically male, masculine behaviors), and depending on the start-up field, there can be adverse effects on the gender that is misaligned with the associated gender stereotype of the start-up field (Brough, Wilkie, Ma, Isaac, & Gal, 2016).

This Master's Thesis focuses on the recruiter perspective in start-ups asking how applicants' organizational attraction changes amongst differing start-up founder genders and gendered start-up fields. More distinctively, I will investigate the applicant's "intent to pursue" to a given start-up which is one of the three constituents that describe organizational attraction, namely the other two being "general attractiveness" and "prestige" by Highhouse, Lievens, and Sinar (2003). (Highhouse et al., 2003). The intent to pursue component is highlighted throughout the Master's Thesis, more so than the remaining organizational attraction components since the key focal point of the study pertains to potential applicants' intentions to engage in the start-up. According to Highhouse et al. (2003), in theory intentions is more indicative of behavior than evaluating attitudes thus reinstating that intentions are a more suited measure as they invoke a live quest of employment in a company, instead of the more passive measure of company attractiveness (Highhouse et al., 2003).

The Master's Thesis overarching goal is to investigate the influence the founder's gender and gendered start-up field has on the potential applicants' organizational attraction.

This leads to the research question:

*How do (male/female) potential applicants show a different organizational attraction to a start-up when founded by a male versus female in a (1) Tech versus (2) Sustainable field?*

## 2. Theoretical Background

### 2.1. Start-ups

The start-up culture is continuously evolving and showcasing new forms on how to operate a successful business. Many business professionals are enticed by the start-up industry due to the fast-paced environment, high risk, and endless bounds of innovation. In order to understand start-ups, there needs to be a familiarity with the fundamentals of creating an organization which is also known as the "three basic approaches". According to de Ven, Hudson, and Schroeder (1984), the entrepreneurial approach, organizational approach, and ecological approach are the three basic approaches for organizational creation (de Ven et al., 1984). The key difference between the three approaches is that "the entrepreneurial approach" focuses on the organizations founder and recruiter's traits, the "organizational approach" disputes the magnitude placed on the fundamental and beginning stages of arranging and planning operations has on the company's form and execution, and the "ecological approach" reviews the external conditions (e.g., politics, economics, etc.) that launch brand new erected organizations (de Ven et al., 1984). Moving forward, the entrepreneurial approach will be the main start-up approach discussed throughout the Master's Thesis with an emphasis on the start-up founders' characteristics.

Now, shifting more towards the theory of entrepreneurship, as defined by Johnson (2001) entrepreneurship entails of possessing information and ideas that are transformed into physical goods, commodities, or a system that is establishing a business to promote the physical good in the global marketplace (Johnson, 2001). Notable characteristic differences of a small business owner to an entrepreneur are that entrepreneurs are not fixated on securing an income to meet their needs, rather entrepreneurs have an increased ambition towards achievements and high stakes in profit with potential threats, and are likely to innovate and adapt (Carland, Hoy, Boulton, & Carland, 1984; Stewart, Watson, Carland, & Carland, 1999; Zhao, 2005). The craving to innovate and create change even with an inevitable side of risk has led many people to pursue entrepreneurship, but never without the first key defining step of obtaining an "entrepreneurial opportunity". As noted by Shane and Venkataraman (2000), in order to have entrepreneurship, individuals must possess entrepreneurial opportunities that appear in a mixture of forms yet differ from opportunities that optimize existing goods and services, and should much rather pioneer or invent new goods, services, information, and methods. (Shane & Venkataraman, 2000). In other words, entrepreneurship involves creating something into existence that previously did not exist, therefore entrepreneurs scout for favorable prospects and innovations acquire the tool to potentially excel and thrive in an industry (Zhao, 2005).

When put simply, entrepreneurship is easily viewed as a continuously rewarding profession in innovation for anyone willing, but we cannot overlook the indisputable lack of gender diversity in entrepreneurship. Some researchers believe the archetypal entrepreneur is highly analogous to masculine attributes (e.g., driven, self-assured) and less so to feminine attributes (e.g., friendly, reasonable) thus leading to the formation of the "think entrepreneur-think male" paradigm (Hancock, Pérez-Quintana, & Hormiga, 2014; Laguía, García-Ael, Wach, & Moriano, 2018, p. 750). Subsequently, there is a growing abundance of research that

covers the topic of gender inequality in entrepreneurship and start-up fields. However, before addressing the lack of gender diversity in entrepreneurship (and start-ups) there is good reason to first examine why gender stereotypes exist, and how they are embedded in leadership.

## 2.2. Gender Stereotypes in Leadership

In everyday life, gender stereotypes are embedded in most circumstances that involve men and women. According to Eagly and Wood (2016), the social role theory is to blame since it uncovers the gender role beliefs instilled in society and how this affects the perception of certain genders (Eagly & Wood, 2016). More specifically, the social role theory explains how gender roles influence behaviors and people's gender identities or self-perception (Eagly & Wood, 2016). This coincides with the gender stereotype aspect of the research question and how social role theory plays an essential part in the extent of an applicant's organizational attraction to a founder's gender (or prescribed gender identity). Eagly and Wood (2016) introduced the idea that gender roles consist of three factors: biological processes, sociocultural factors, and stereotypic expectations (Eagly & Wood, 2016). Each of these factors plays a part in how we believe a certain gender should behave in society and define what actions are considered acceptable which align with the defined gender role.

As stated by Eagly and Steffen (1984), these gender beliefs strongly align with communal and agentic personal traits so much so that society typically expects men to be more agentic (e.g., self-assertive, self-expansive, urge to master) and women to be more communal (e.g., selflessness, concern with others, desire to be at one with others) (Eagly & Steffen, 1984). The root cause in how agentic and communal gender beliefs originated, can be attributed to the differences in workforce positions, where men usually held higher-level positions that promote power, status, and authority, and women either held lower positions or no position at all (Eagly & Steffen, 1984). These qualities associated with holding a higher position have become rather problematic today in the efforts toward gender equality in leadership positions and has "disadvantaged" women leaders since there is a recognized incongruity between agentic traits ascribed to the classical leader, who occupies these higher positions (Heilman, 2001; Rosette & Tost, 2010).

Leadership theory suggests that specific types of individuals more prone to succeed as leaders in organizations have certain traits of dominance, autonomy, assertion, extroversion, and motivation (McClelland, 1975; McClelland & Boyatzis, 1982; Mumford et al., 2000). Hence, reassuring previous studies claim that leaders are presumed to be agentic, attaching expectations outlined as male as being what is truly expected of a leader (Hentschel, Braun, Peus, & Frey, 2018). Which to some extent reinforces why there is an absence of women in leadership, especially in leadership roles, when the stereotypical traits that are associated with men are favored over those associated with women in successful leadership positions.

Unfortunately, there are not many ways to avoid the inherent stereotyping in leadership positions without enduring social penalties based on the social incongruity theory, but there is one theory that deems there is potential to benefit from disobeying stereotypes, this being the expectancy violation theory. Thus, progressing from the basics of gender roles (e.g., expected qualities or behavioral tendencies for men and women) and more towards the effects of social roles (e.g., social expectations that are shared and pertain to individuals who engage in a social position) these two theories expand upon many of the unforeseeable responses both men and women face when defying social roles (Eagly & Karau, 2002).

Per Eagly and Karau's (2002) definition of social congruity theory, the "potential for prejudice exists when social perceivers hold a stereotype about a social group that is incongruent with the attributes that are thought to be required for success in certain classes of social roles" (Eagly & Karau, 2002, p. 574). The theory further explains where the prejudice towards female leaders who are incongruent with the characteristics of leader roles (predominantly masculine attributes) and the agency is derived. The social incongruity theory dilemma for women leaders is twofold. On top of the upfront difficulties of being incongruent with traditional female roles and leadership roles, there remains little access to any leadership roles that will not have preconceived biases. Further adding to the inequality amongst genders in leadership, as reported by Eagly and Carli (2003), men do not receive any form of punishment for communal actions, rather they benefit more from portraying acts of dominance and boldness, and male leaders have a broader assortment of leadership actions they can practice with less bias (Eagly & Carli, 2003). Thus, detailing how social congruity theory is more problematic for women leaders who practice agentic behaviors than male leaders who practice communal behaviors, and male leaders are not harmed in any way towards portraying communal behaviors.

Luckily, other forms of leadership are defined as having either more communal or agentic behaviors, as concluded by Eagly et al.'s (2003) meta-analysis, female leaders were more prone to transformational leadership (also known as "charismatic leadership"), which includes a few behaviors that align with roles ascribed to women pushing for more encouraging, mindful behaviors" (Eagly et al., 2003); On the contrary, male leaders were more prone to transactional leadership, which recognize and assist the supporting (lower level) members by building a relationship to trade insight and converse with them about their responsibilities and objectives (Burns, 1978; Eagly & Carli, 2004). By and large, female leaders can be described to a greater extent as transformational than male leaders. A few possible reasons as to why were noted in Eagly et al.'s (2003) meta-analysis findings interpretations, female leaders are either making an effort to try to resolve the existing dissonance between roles in leadership and female gender roles or the impact gender roles may have on leadership is such a way that women concern themselves more with the feminine facets of transformational leadership (Eagly et

al., 2003). When both leadership styles were evaluated with female and male leaders in a meta-analysis conducted by Eagly, Makhijani, and Klonsky (1992) it appears when compared with men, women received even more of a negative reaction when embracing an autocratic (or commanding) leadership style even when women acted in less of an autocratic style than the men (Eagly et al., 1992). Thus, raising the question, how can women leaders not be confined to only communal leadership practices that are viewed as matching their socially accepted female gender roles. Contrarily, in a further gender and leadership style study, when compared with women, men who exhibit transformational leadership (generally communal behaviors aligning with stereotypes about women) were more promotable and more effective than women, completely defying the social congruity theory and fulfilling the expectancy violation theory (Hentschel, Horvath, Peus, & Sczesny, 2018).

As stated by Hentschel, Braun, et al. (2018), expectancy violation theory states there is a possibility for those who show abnormal stereotypical behaviors but in a positive manner can be perceived more favorably than the persons showing typical stereotypical behaviors (Hentschel, Braun, et al., 2018). This theory reveals there is a small chance for both men and women leaders to attempt to flee from the prescribed stereotypes embedded in leadership, only by opposing stereotypical behaviors with a seemingly more positively viewed behavior. However, in this case, the expectancy violation theory uncovered a harsh truth for female leaders, that no matter the leadership form (communal or agentic), the male leaders' unexpected but favorable behaviors will solely benefit only male leaders and will not assist in career growth and promotion for female leaders to the same extent as it will for men (Hentschel, Braun, et al., 2018).

Consequently, bringing the discussion back to stereotypes in leadership. There is a strongly held phenomenon in gender and leadership research that demonstrates a lasting connection between stereotypes of successful managers to masculine traits, called the "think manager – think male" stereotype (Laguía et al., 2018, p. 750). Primarily the "think manager – think male" phenomenon highlights the immediate incongruity women face in managerial positions, leadership positions, or any position for that matter where women lack the expected stereotypical attributes in such a position. Fortunately, the times are changing and there are a few possibilities on how to evade gender stereotypes, or as the case in expectancy violation theory, how to benefit from gender stereotypes. Eagly and Wood (2016) insisted it is possible to alter predefined gender roles (sex-typical roles) for males and females, but is not an easy transition, especially in a gender-dominated field (Eagly & Karau, 2002; Eagly & Wood, 2016). Another potential possibility in evading stereotypes is finding a niche in a "sex-typed" occupation, which is an occupation where a large portion of the people in an occupation are of one sex and when there is an expectation that this is the preferred norm (Schein, 1973). Based on the previously stated possibilities, firstly, the redefining gender roles option, which ultimately means redesigning the internal and external ca-

reer assignments and gender social scale for both men and women, is a good option but will take a considerable amount of time to accomplish. The more feasible possibility to further investigate is finding a niche in a sex-typed occupation where the communal traits and gender stereotypes for women, as well as agentic traits and gender stereotypes for men, are all perceived as acceptable to a varying degree. Having this in mind, the focus will now intertwine the start-ups, leadership, and gender stereotypes concepts into gender stereotypes in start-up fields with the aim to find a niche in entrepreneurship.

## 2.3. Gender Stereotypes in Start-up Fields

In parallel with the leadership stereotypes being stereotypically male, thus resulting in the "think manager – think male" phenomenon, entrepreneurship holds a similar gender stereotype of being associated with masculine traits, so the "think entrepreneurship – think male" phenomenon exists (Gupta et al., 2009; Laguía et al., 2018; Schein, 2007). Nowadays, the think entrepreneurship – think male phenomenon, seems nonsensical given the fact that globally women and men business owners are equally successful yet are still less likely to pursue being an entrepreneur (Hentschel, Braun, et al., 2018; Kalleberg & Leicht, 1991). In recent years, there has been a drastic rise in the number of women entrepreneurs, but women's entrepreneurial intentions, similarly to men, are greatly affected due to socially constructed gender stereotypes (Gagnon, Cukier, & Oliver, 2021; Gupta et al., 2009). Women's beliefs and goals can be influenced by societal norms further discouraging women from seeking a professional career in entrepreneurship (Gagnon et al., 2021). Arguably, the reasoning behind why women are hesitant to become entrepreneurs can be better understood in the "lack of fit" theory (Heilman, 1983). As defined by Hentschel et al. (2020) the "lack of fit theory suggests that when women compare their personal characteristics with the stereotypically masculine characteristics of career opportunities, the mismatch reduces their interest in pursuing such opportunities" (Heilman, 1983; Hentschel et al., 2020, p. 582). Moreover, Laguía et al. (2018) addressed how women tend to assess female entrepreneurs more favorably than male entrepreneurs, detailing that female entrepreneurs have more self-control and greater ambitions (de Pillis & Meilich, 2006; Laguía et al., 2018). Hence, affirming there is an interest in women wanting to pursue careers in entrepreneurship, despite the mismatch in stereotypical characteristics in the career opportunity.

Lately, there has been much debate between researchers if entrepreneurship is in fact as agentic as once believed, and to what extent can entrepreneurship be considered. The classical belief is entrepreneurship is stereotypically portrayed as an agentic (masculine attributes) occupation which is associated with being achievement and power-oriented (Heilman, 2001). While more recent studies by researchers advocate for the communal nature in entrepreneurship which includes cooperation, networking, and problem-solving (Jakob, Isidor, Steinmetz, Wehner, & Kabst, 2019). Thus, unearthing the

added argument, that the predominant agentic depiction of entrepreneurship fails to mention the communal piece of entrepreneurship that equivalently exists, being the co-operation in teams and networks, partner relations, and contributions to society (Jakob et al., 2019). Even with the ongoing debates, there is still a considerable amount of progress needed to fix the entrepreneurship gender inequality issue and shift the stereotypically male perception of entrepreneurship towards a more female accepting stereotype in entrepreneurship.

On a more optimistic note, research has found that not all start-up fields are associated with agentic masculine stereotypical expectations. There has been a noticeable link between greenness and stereotypical femininity in green behaviors and environmentally sustainable fields where women would be believed as a better fit (Brough et al., 2016). In fact, regarding stereotypes, consumers partaking in green practices are viewed as more feminine, and even regard themselves as seemingly more feminine, according to peoples' stereotypes (Brough et al., 2016). Especially nowadays with more of a societal environmental push, being perceived as green or environmentally conscious is in everyone's best interest, regardless of gender. Dietz et al.'s (2002) study highlight how women's inclination of being more altruistic and empathetic than men, which is closely linked to environmentalism, emphasizes the alignment with stereotypical roles of women, and their avoidance of any form of harm to people or species (Dietz et al., 2002). Thus, revealing a conflict men might face when taking part in sustainable behaviors that do not conform to the gender norm. Based on a study conducted by Brough et al. (2016) men were actively deterred from engaging in green behaviors due to gender identity threat and men endured a significantly higher need for gender identity maintenance (Brough et al., 2016). As follows, to put in simpler terms by Bosson and Michniewicz (2013), when men encounter undesirable anxieties regarding gender status, they abstain from femininity very strongly and revert to viewing femininity similarly to the level of the classical stereotypes. When the gender status, or the classical stereotype identity, of males is challenged this evokes a need to reduce the unpleasant reaction by elevating masculinity (Bosson & Michniewicz, 2013). The reasoning behind these extreme reactions by men breaking gender norms and not so much for women is due to the greater psychological consequences that men experience more than women after "gender-norm transgressions" (Aubé & Koestner, 1992; Gal & Wilkie, 2010; O'Heron & Orlofsky, 1990). Thankfully, such psychological consequences can be avoided as confirmed in Dietz et al.'s (2002) study that by "affirming" men's masculinity this will lessen the need to take part in any gender identity maintenance, therefore increasing green and sustainable preferences in men (Dietz et al., 2002). Thus, confirming that the sustainable start-up field is, a matter of fact, a niche in entrepreneurship. Additionally, further findings suggested that the green-feminine stereotype was equally recognized amidst women and men, with this in mind make sure when promoting green products to men, use masculine branding as a strategy to better attract a male audience.

Moving on from the sustainable start-up (predominantly feminine) gender gap to an equally opposing field that is viewed predominantly as masculine, is the technology field. As stated by Lie (1995), technology in countless instances is "created in the image of man" (Lie, 1995, p. 379). Even today with a steady rise in women pursuing careers in STEM fields the tech industry remains a male-dominated environment. Similarly, to how men reacted when confronted with a gender identity threat, women when coping with the lack of acceptance by men in STEM fields responded by appearing less feminine, purposefully became digressive to neutralize the gender difference, or departed work in such fields (Alfrey & Twine, 2017). There is even a common analogy for depicting the shortage of women in STEM careers , which is called the "leaky pipeline" (Blickenstaff, 2005). Against popular belief, even though technology is associated with masculinity, technology symbolically does not connect gender structures and identities, meaning men's technology usage understandably is not adequate enough to make technology merely a figure or symbol of masculinity (Lie, 1995). Likewise, men who master technology signify a concept that is acknowledged as masculine and establish the sense of masculinity in the technological concept, and men who do not master technology will most likely not affect the well-established image of stereotypical masculinity (Lie, 1995). Seemingly, this lack of negative affect towards men who do not master technology is why it has been suggested that females are easier to attract into male-dominated or technology fields rather than attracting males into female-dominated fields (Kindsiko & Türk, 2017).

### 2.4. Applicant Recruitment

Building off of the theoretical basis of gender stereotypes in entrepreneurship and start-up fields towards a more practical view, there is much to consider when recruiting applicants who want to pursue a career in a start-up, keeping in mind the stereotypical preconceptions for men and women. Currently, it is not fully known how much of an applicant's preconceived views on an organization may originate from the recruiter themselves, but there is enough evidence to prove that applicant's desire to apply and keenness of an organization can be influenced by recruitment (Roberson, Collins, & Oreg, 2005). Start-ups, unlike organizations, have a unique vantage point with applicant recruitment since the founder (or entrepreneur) of the start-up is both the leader and recruiter for the start-up, especially during the beginning stages of building the start-up, if not throughout all the stages. This puts additional pressure on the founder to appeal even more so to the potential applicants during recruitment.

As strongly advised, the recruiter needs to prioritize establishing a sense of fit among the potential applicants to both the organization and supervisor. There are a few underlying hurdles that need to be overcome before achieving a potential applicant's sense of fit; Firstly, the obstacles regarding applicant-organization fit will be addressed, and shortly

after the obstacles regarding applicant-supervisor fit will be named, both bringing the recruiter up to speed on how to better establish a sense of fit among potential applicants.

Largely for women, the lack of fit theory by Heilman (1983) has a huge impact since women who feel their personal characteristics are mismatched with the stereotypically masculine characteristics in a certain career opportunity or field, tend to have reduced interest in striving for such careers, as in the technology field (Heilman, 1983; Hentschel et al., 2020). The same 'lack of fit theory' effect was observed in men who feel their personal characteristics are mismatched with the stereotypically feminine characteristics in the sustainable field, resulting in either a similar tendency to reduce interest in the field or as noted by Brough et al. (2016), "affirming masculinity" helped men avoid from having to endure gender identity maintenance and increase interest in the field (Brough et al., 2016, p. 28). Accordingly, the following is hypothesized, in which the corresponding Hypothesis 1*a* and 2*a* will be later introduced in the theory:

> **Hypothesis 1*(b):* ** *Female applicants have an increased intent to pursue to a sustainable context start-up versus a technology context start-up.*

> **Hypothesis 2*(b):* ** *Male applicants have an increased intent to pursue to a technology context start-up versus a sustainable context start-up.*

Notably, this is where the threat of gender stereotypes comes into play for applicants', thus heightening the applicants perceived lack of fit in a start-up. According to Hentschel et al. (2020) fit assessments have quite an expansive reach of influence, notably in one's degree of expected sense of belonging in an organization, predicted outcome of an approach, and performance assumptions (Hentschel et al., 2020).

This guides to the signaling theory which suggests that anything revealed to potential applicants during the recruitment process can be inferred by the applicant as an essential characteristic for the job opportunity (Connelly, Certo, Ireland, & Reutzel, 2011; Hentschel et al., 2020) In this case, taken from the recruiter (or start-up founder) perspective, the "signaler" (e.g., recruiter) is revealing to the "receiver" (e.g., potential applicant) during the recruitment process essential characteristics for the job opportunity (Connelly et al., 2011). In fact, Busenitz, Fiet, and Moesel (2005) mentioned how the entrepreneur or startup founder can be a paramount signal of the start-up's quality for potential applicants, due to the founder, likely having more information than anybody else about the start-up's quality (Busenitz et al., 2005; Hentschel et al., 2020). Therefore, spotlighting how start-up recruiters (founders) can have an upper hand during the applicant recruitment process if able to effectively signal the start-ups quality to the potential applicants.

Now, factoring in a key defining trait that recruiters promote, and potential applicants look for when gauging their fit to a start-up, leads the way for the introduction of self-efficacy. As defined by Bandura (1977), self-efficacy is a per-son's acceptance in their capabilities to do well in an area or field (Bandura, 1977). Tellhed, Bäckström, and Björklund (2016) further report women to have more of a likelihood than men, to have a lower self-efficacy in STEM (science, technology, engineering, and math) jobs, meaning they feel less competent and will actively try to avoid such jobs in these fields (Tellhed et al., 2016). Interestingly, previous studies have supported the claim that careers dominated by women give females a feeling of obtainable success, especially in the health care, domestic sphere, and elementary education fields, yet females are still hesitant about their potential in STEM career where males are the known majority (Tellhed et al., 2016); Conversely, men view their obtainable success equally whether in a field or career that is female or male dominated (Betz & Hackett, 1981; Bridges, 1988; Matsui, Ikeda, & Ohnishi, 1989; Tellhed et al., 2016), portraying fewer self-efficacy concerns all around.

When engaging in the recruitment process, the potential applicants' perceived fit to the supervisor, in this respect, the supervisor being the "recruiter or start-up founder", is just as imperative as the potential applicants' perceived fit to the organization. In repositioning the potential applicants fit towards the supervisor (recruiter or start-up founder) a crucial mechanism that should not go unnoticed when evaluating person-supervisor fit, is the homophily theory. The homophily theory, in general principle, is the "similarity of members characteristics" in a group composition either referring "to social identities that are attached externally to individuals (e.g., ascribed characteristics such as gender, race, or age,) or to internal states concerning values, beliefs, or norms" (Ruef, Aldrich, & Carter, 2003, p. 197). This general theory is very much applicable when men or women applicants are trying to foresee their fit to the organization by noticing what characteristics in the business are similar to their own, such as gender stereotypical characteristics depending on the field. Which according to Hentschel et al. (2020) the belief individuals have about possessing identical qualitiesof other employees in the company, means there is a higher chance they will be enticed to, recognize with, and join that career (Devendorf & Highhouse, 2008; Hentschel et al., 2020; Peters, Ryan, Haslam, & Fernandes, 2012). Adversely, this theory can deter an applicant from a company for they foresee or sense a lack of fit. This brings the following hypotheses:

> **Hypothesis 1*(c):* ** *Female applicants have an increased intent to pursue to start-ups founded by females with a sustainable context.*

> **Hypothesis 2*(c):* ** *Male applicants have an increased intent to pursue to start-ups founded by males with a technology context.*

Moreover, entrepreneurship literature has viewed the homophily theory as a way entrepreneurs and others involved are intrinsically tied and drawn to one another, invoking the axiom "birds of a feather flock together" (Phillips, Tracey, & Karra, 2013). Therefore, applicants can foresee their fit to
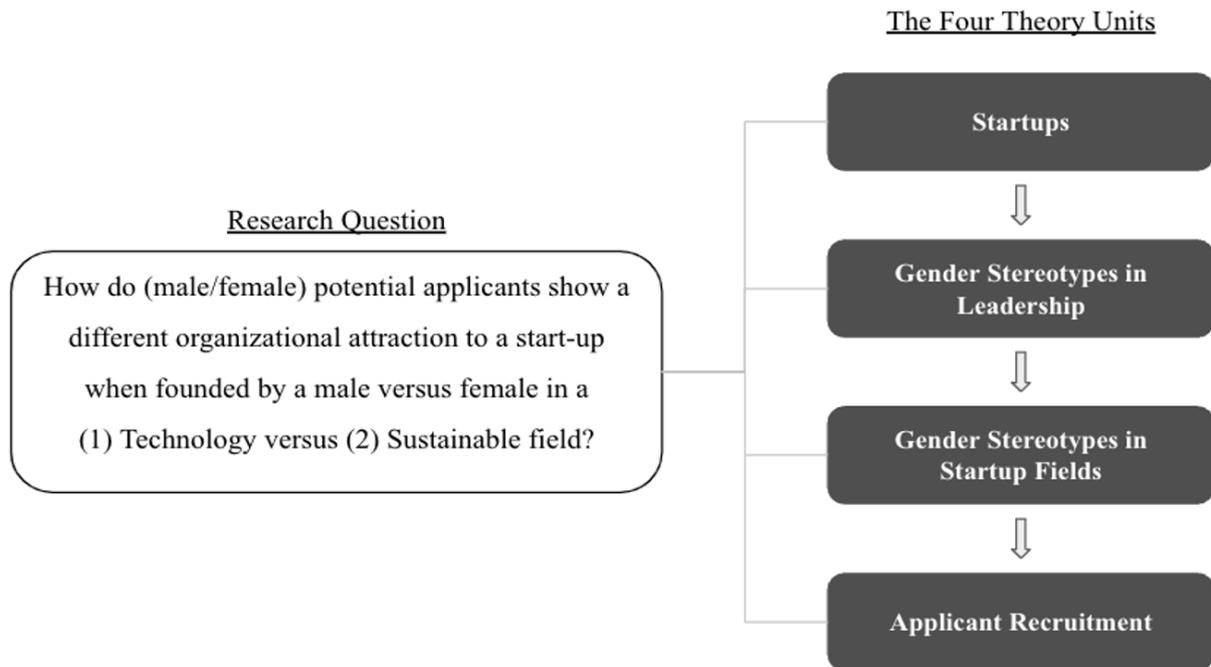
**Figure 1:** The Research Question and Four Theory Units (Own illustration)

the supervisor or start-up founder on the individual level, by using the homophily theory.

Similarly, to Martins and Parson's (2007) report, that validated, in women there is a rise in desirability towards an organization which happens when there are larger amounts of women in senior leadership positions (Hentschel, Braun, et al., 2018; Martins & Parsons, 2007). The same was reported about men by Rice and Barth (2016), that men hold stronger "stereotypical views in the workplace", especially when it comes to leadership roles where men "often selected the male applicants over similarly qualified female applicants" (Rice & Barth, 2016, p. 4). As a last remark on homophily theory, according to Greenberg and Mollick (2017), genders relation to homophily, as shown in a number of studies, is as an accepted ground for homophily (Greenberg & Mollick, 2017), thus insinuating potential applicants' heightened attraction to companies and supervisors that fit their gender. To that end, the following were hypothesized:

> **Hypothesis 1(a):** *Female applicants have an increased intent to pursue to female-founded start-ups than male-founded start-ups.*

> **Hypothesis 2(a):** *Male applicants have an increased intent to pursue to male-founded start-ups than female-founded start-ups.*

> **Hypothesis 3:** *Female applicants have decreased intent to pursue when the founder of the sustainable context start-up is male as compared to female.*

> **Hypothesis 4:** *Male applicants have decreased intent to pursue when the founder of the technology*

*context start-up is female as compared to male.*

With all this in mind, there is still much in question from the recruiter's point of view, regarding the effect entrepreneurs' gender and gendered start-up fields have on organizational attraction for potential applicants, and whether the theory holds for how gender stereotypes in leadership, entrepreneurship, and start-up fields are perceived. As a summary of this theory review, the following four hypotheses were postulated from the four main theory units covered, as illustrated in Figure 1.

## 3. Method

In further investigating the research question, I conducted a quantitative study that examined participants' organizational attraction towards start-ups with differing founder genders (male or female) in either technology or sustainable fields. The experiment is with a 2x4x2 between-subjects design with applicant gender (male versus female) interested in a start-up field (stereotypically male tech industry versus stereotypically female sustainable industry versus non- stereotypically male sustainable industry versus non-stereotypically female tech industry) and founder gender (male versus female) as the independent variables. Each participant in the experiment was shown a randomized vignette that either displayed a male founder of a technology start-up, a female founder of a technology start-up, a male founder of a sustainable start-up, or a female founder of a sustainable start-up (e.g., Figure 2, p. 17). Based on the pre-chosen vignette scenario administered to the survey participants, the participants were expected to answer the

survey questions as if they would or would not be attracted to such an organization.

## 3.1. Sample

The study sample consisted of 246 participants selected by convenience sampling since I approached individuals in my network who would fit the research participant criteria.[1] The individuals in my network who were selected to take part in the experiment pertained more towards young professionals and graduates, young professionals working in start-ups, and either graduate or soon-to-be graduates interested in start-ups. The participants' study background did not prove to be a major focus since there is a wide variety of start-ups with differing education credentials.

In the final sample, I removed all participants who did not pass the manipulation checks, lacked adequate English language skills, and failed the attention check. All participants needed sufficient knowledge in English to complete the online questionnaire since the survey questions were conducted in English. Since the hypotheses address both men and women, I recruit participants who identify as either male, female, or other in the study and further investigate for potential gender differences. Additionally, I decided to keep all the participants, not regarding their interest in start-up employment because the Pearson correlation between the dependent variable ("Intent to Pursue") and the "start-up employment interest" variable is low (Pearson correlation = .144) and therefore independent. Overall, the final sample consisted of 197 participants (59% female; 41% male; $M_{age} = 30.83$, $SD_{age} = 10.361$), Table 1 depicts the randomly selected vignettes per female versus male participants. The final sample had a vast range of 26 different nationalities. The final sample had 90 Americans (46%), 58 Germans (29%), and 49 participants from other nationalities (25%). 97% of the sample have already obtained a bachelor's, master's, or doctorate degree. The majority of the sample are already employed (121 participants, 61%) and (62 participants, 32%) are students, and of the currently employed sample, (21%) are currently working at a start-up, (12%) previously worked at a start-up, and when asked if interested in working for a start-up, the majority (73%) chose options neutral to the highest option ("very interested"). Similarly, when the participants, who are currently students, were asked if they are interested in working for a start-up, the majority (75%) chose options neutral to the highest option ("very interested").

## 3.2. Study design

The study design included an experimental online survey that investigated participants' interest in randomly assigned tech or sustainable start-ups and whether the start-up founders' gender, which was also randomly assigned as either a male or female founder, is even a consideration when reviewing one's organizational attraction towards a start-up. I used an online survey program, Questback *Unipark* (Version EFS Fall 2021), to develop the survey[2] and used it as the key program for participants to access the survey through the Questback *Unipark* link (https://ww3.unipark.de/uc/StartupRecruitment/). The survey was completed on multiple devices such as on a mobile device, computer, or tablet. Firstly, the study sample was recruited via email, social media, and word of mouth. The survey was active for a total of 45 days with an average survey completion time of 8 minutes and 51 seconds with a total of 43 questions from start to finish. The data gathering was also conducted through Questback *Unipark*.

## 3.3. Procedure

At the beginning of the online experiment, every participant was randomly assigned one of four vignettes of a start-up advertisement (Vignette 1: Male founder and technology start-up; Vignette 2: Male founder and sustainable start-up; Vignette 3: Female founder and technology start-up; Vignette 4: Female founder and sustainable start-up, examples of the experimental manipulation are shown in Figure 2) where they were advised to form a first impression of the start-up and then would answer the following questions which would relate to the presented start-up advertisement. Every participant was given a minimum of 35 seconds to review the start-up advertisement before they could continue the survey and were informed that there would be no possibility to look at the start-up advertisement description again. In order to ensure consistency throughout the vignettes, the start-up advertisement scenarios for technology start-ups are worded the same, with the only differences being the male or female names assigned. The same applies to the start-up advertisement scenarios for sustainable start-ups. It was imperative that the names chosen for the founders in the start-up advertisements were viewed similarly as both attractive names for a female and male. According to Erwin's (1993) previous study on first names and perceptions of physical attractiveness where he compiled a list of 160 names and deduced through experimentation the most attractive names. The most attractive female name was Danielle, and the most attractive name for a male is Alexander, both with similar attractiveness scores (Erwin, 1993). I decided to provide vague and faceless images for the founders in the start-up advertisement since this is not a key factor being investigated in the study, therefore did not want to draw any further attention to this factor. Lastly, regarding the start-up advertisements, the technology start-up scenario is similarly worded to the sustainable start-up scenario, yet the key difference is that the technology start-up is "aiming to further technological advancements" in the mobility industry by producing an invention "to take the industry to a new technological level" while the sustainable start-up is "aiming to improve environmental

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[1]The data was collected as part of a larger research project of the Chair of Research and Science Management of the Technical University of Munich.

[2]The survey was developed as part of a larger research project of the Chair of Research and Science Management of the Technical University of Munich.

**Table 1:** Experiment Vignette Distribution for Female/Male Participants

| Vignette (Founder Gender + Field Context) | *Male Participants* ($n = 81$) | *Female Participants* ($n = 116$) |
|---|---|---|
| 1. Male + Technology | 15 | 37 |
| 2. Male + Sustainable | 17 | 30 |
| 3. Female + Technology | 20 | 23 |
| 4. Female + Sustainable | 29 | 26 |

*Note.* $N = 197$. The sample size used after filtering the participants. Only filtered for the participants that passed the manipulation, attention, and English language proficiency checks.

sustainability" in the mobility industry by producing an invention "to actively combat climate change".[3] These key differences in the start-up advertisement scenarios were essential for the study since I am investigating the effect founder gender and start-up fields have on potential applicants' organizational attraction and based on the participants' reactions to the start-up advertisement scenarios the data collection could further reveal groundbreaking insight.

After reviewing the randomized vignette scenario, the participants were presented with a few pages of statements, where they were instructed to rate "to what extent do you agree with the following statements about the described start-up" or "to what extent do you agree with the following statements about the founder of the start-up" from 1 (strongly disagree) to 7 (strongly agree). The statements provided were based on scales previously researched that measure Organization attractiveness (General attractiveness, Prestige, Intentions to pursue), Person organization fit, Person Supervisor fit, and Anticipated Belongingness. The survey statements were organized based on the scope of the scales used, meaning the broader scale statements were presented first and the more specific scale statements were later in the survey (1: Prestige scale, 2: Person organization fit scale, 3: Anticipated belongingness scale, 4: Person Supervisor fit scale, 5: General Attractiveness scale, 6: Intent to pursue scale), and are described in more detail below in the 'Measures' section. On the last survey page, demographic data was collected by asking participants to provide information on their gender, age, highest educational qualification, nationality, current activity, how long they have worked, interest in working for a start-up, experience working at a start-up, and if they understood the English presented in the study.

### 3.4. Manipulation and Attention checks

Towards the end of the survey, participants were asked to recall the founder's gender and the field of the start-up in the randomly selected vignette, which served as manipulation checks in the study. The additional supporting images in the start-up advertisement vignette below the founder's gender profile served as an addition to the manipulations in the experiment to reimpose the vignette start-up field selection. If the start-up advertisement scenario was for a technology start-up field the supporting image was a lightbulb with the words "Inspiring technological advancements" below it, and for a sustainable start-up field the supporting image was a plant growing out of hand with the words "Ensuring a prosperous future". In the last survey question, the participants were asked how attentively they filled out the survey, which was used as an attention check for the participants. An outline of the online experiment which was administered with Questback *Unipark* can be found in the Appendix.

### 3.5. Measures

In the study, all items were rated on a 7-point-Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). When necessary, items were rephrased to fit the vignette scenario the participants were given. An example of a rephrased item that was adapted to the vignette scenario was an item from Cable and DeRue's (2002) scale on Person Supervisor Fit. The original item in the scale was phrased: "My personal values match my supervisor's values and culture" (Cable & DeRue, 2002). The original item was then rephrased to the context of the vignette scenario presenting a start-up founder ("I think my personal values match the founder's values and culture") since the founder can interchangeably play the role of a supervisor in this context (Cable & DeRue, 2002). In addition, the words "I think" were added to the beginning of certain scales original items to emphasize that I am interested in the participant's personal assessment and judgement (e.g., Original item: "I could fit in well at this company.", Rephrased: "I think I could fit in well at this company.") (Gaucher, Friesen, & Kay, 2011). Besides these notable item rephrasing, the rest of the original scale items' wording was not changed, therefore the item tenses and overall item meaning remain the same. A list of all the measures used in the survey is provided in the Appendix. There were a total of six scales used in the experiment, and each

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[3]The experimental manipulation was developed within a larger scale research project at the Chair of Research and Science Management of the Technical University of Munich.

**Vignette Startup Field**
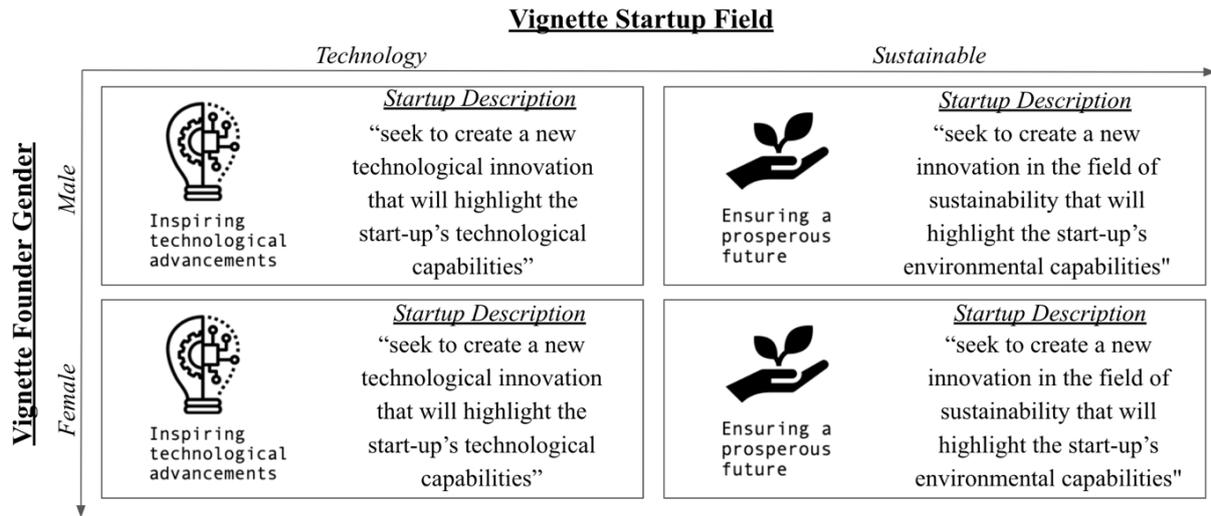


**Figure 2:** The Four Experiment Vignettes (Own illustration, Icon Sources: freepik (2021) (left) and Naive (n.d.) (right))

This figure is a depiction of the experimental manipulation examples of the four vignettes that were randomly assigned to each participant in the experiment.

**Table 2:** Summary of Scales Reliability Test

| Scale | Cronbach's Alpha ($\alpha$) |
|---|---|
| 1. Prestige | 0.85* |
| 2. Person Organization Fit | 0.83* |
| 3. Anticipated Belongingness | 0.85* |
| 4. Person Supervisor Fit | 0.90* |
| 5. General Attractiveness | 0.91* |
| 6. Intent to Pursue | 0.85* |

*Note.* $N = 197$. $^{*}\alpha > 0.7$.

scale passed a reliability test which computes the Cronbach's alpha for each scale that is displayed in Table 2.

### 3.5.1. Organization Attraction

Organization attraction was assessed with Highhouse et al. (2003) adapted scale which is comprised of three components (i.e. general attractiveness, intentions to pursue, and prestige) all with notably separate items (Highhouse et al., 2003). General attractiveness was assessed with five items on company attractiveness (e.g., "For me this company would be a good place to work."), which yielded a valid and reliable Cronbach's alpha of 0.91. Intentions to pursue served as the dependent variable and was assessed with five items on the behavioral intentions of the participants towards the company (e.g., "I would exert a great deal of effort to work for this company.") and yielded a valid and reliable Cronbach's alpha of 0.85. Prestige was assessed with five items on company prestige which focuses more on the company's social influence (Highhouse et al., 2003; e.g., "Employees are probably proud to say they work at this company."). The scale computed a valid and reliable Cronbach's alpha of 0.85.

### 3.5.2. Person Organization Fit

Participant's perceptions of person organization fit were assessed with three items adapted from Lauver and Kristof-Brown (2001) (e.g., Original: "My values match or fit the values of this organization."; Rephrased: "I think my values match or fit the values of this organization."). This yielded a valid and reliable Cronbach's alpha of 0.83.

### 3.5.3. Anticipated Belongingness

To measure the participants' anticipated belongingness, Gaucher et al.'s (2011) validated four items measure (e.g., Original: "My values and this company's values are similar."; Rephrased: "I think my values and this company's values are similar.") was used (Gaucher et al., 2011). Which yielded a valid and reliable Cronbach's alpha of 0.85.

### 3.5.4. Person Supervisor Fit

Person supervisor fit was assessed with the three items adapted from Cable and DeRue (2002) (Original: "The things that I value in life are very similar to the things that my supervisor values."; Adapted: "I think the things that I value in life are very similar to the things that the founder

of this start-up values."). Which yielded a valid and reliable Cronbach's alpha of 0.90.

## 4. Data Analysis

The data analysis was performed using the IBM statistical analysis tool SPSS (Property of IBM Corp., Version 27, 2020). After completing the survey on Questback *Unipark*, the finalized data from the experiment was downloaded to the IBM statistical analysis tool SPSS. In an effort to test for differences between hypotheses catered to either female applicants (Hypothesis 1A, 1B, 1C, and 3) versus male applicants (Hypothesis 2A, 2B, 2C, and 4) measuring the participant's intent to pursue (dependent variable) based on either the founder's gender or field context variables or both, the means being compared for each hypothesis were performed through a linear model for one-way analysis of variance (ANOVA), analysis of covariance (ANCOVA), or a general linear model for two-way ANOVA. I ran an ANCOVA analysis specifically for hypotheses 1A, 1B, 2A, and 2B since all the hypotheses are either investigating the female or male participant's intent to pursue to the specific 'gender of the founder' (male versus female) variable or 'start-up field' (technology versus sustainable) variable, so I decided to include the covariate (or control variable), which is the variable that is not present in the hypothesis since it has the potential to make a difference in the direction of the relationship between variables. Furthermore, an exploratory analysis was performed due to the high correlation between the Intent to Pursue, dependent variable, and General Attractiveness where the hypotheses were performed through the general linear model for multivariate analysis of variance (MANOVA), multivariate analysis of covariance (MANCOVA), and general linear model for two-way MANOVA. In Table 3, the means, standard deviations, and correlations between the study variables are exhibited.

## 5. Results

In advance of testing the hypotheses, the experiment's initial sample ($N = 246$) was filtered strictly for the participants who passed both manipulation checks in the experiment, passed the attention check, and had sufficient English skills. The internal consistency of scales was evaluated using Cronbach's alpha to test the scales' reliability. The final sample with the filtering was 197 participants. Frequency tables were computed for the founder gender, field context, and age variables to compare the number of observations, screen for any data errors, and analyze the filtered data.

### 5.1. Results of Analysis/Hypothesis Testing

Hypothesis 1A predicted female applicants would have an increased intent to pursue to female-founded start-ups than male-founded start-ups. The results from the analysis of covariance did not support the assumption, therefore the hypothesis was not supported. In this case, the 'founder gender' was the independent variable, 'the start-up field context'

was the covariate, and 'intent to pursue' remains throughout all the proposed hypotheses as the dependent variable. There were no significant differences in the female applicant's intent to pursue ($F(1, 113) = .09$, $p = .76$, $\eta^2 = .001$) between female-founded start-ups and male-founded start-ups. Although the hypothesis was not supported, there were two key takeaways to note, (1) the covariate, the 'start-up field context', was found to be significant ($p = .02$), and (2) the mean is higher for female-founded start-ups ($M = 4.59$, $SD = 1.07$) than male founded start-ups ($M = 4.49$, $SD = 1.11$), but still lacked significance ($p = .76$). Thus, Hypothesis 1A was rejected. Refer to Table 4 for the means and standard deviations found for Hypothesis 1A, 1B, and 1C.

In testing whether the female applicants have an increased intent to pursue to a sustainable context start-up versus a technology context start-up, Hypothesis 1B, I performed an analysis of covariance. The results did in fact support the assumption, leading to the hypothesis being supported. Once again, a covariance was included to test the hypothesis, notably the 'founder gender' variable, and the independent variable was the 'start-up field context'. A significant main effect occurred with the female applicant's intent to purse to sustainable context start-ups, ($F(1, 113) = 5.71$, $p = .019$, $\eta^2 = .05$). Some of the results which led to the hypothesis being supported were primarily due to the female applicants having a significantly higher mean towards a sustainable context start-up ($M = 4.78$, $SD = 1.04$) versus the technology context start-up ($M = 4.30$, $SD = 1.09$). Hence, Hypothesis 1B was accepted.

Formulated from the previous hypotheses, Hypothesis 1C, predicted female applicants have an increased intent to pursue to start-ups founded by females with a sustainable context. A two-way analysis of variance was performed, and the results did not support the assumption, thus the hypothesis was not supported. In contrast to prior notions, there were no significant differences in the female applicant's intent to pursue ($F(1, 112) = 3.03$, $p = .08$, $\eta^2 = .03$) to start-ups founded by females with a sustainable context. Specifically, for this hypothesis, there were no covariates since both variables, Founder Gender and Start-up Field Context, that in previous hypotheses ran the risk of making a difference are independent variables. Unfortunately, female participants do in fact have a higher mean towards start-ups founded by females with a sustainable context ($M = 5.00$, $SD = 0.97$) versus a male founded sustainable start-up ($M = 4.59$, $SD = 1.08$). For the technology start-up field, the observation switches since females are preferring a male-founded technology start-up ($M = 4.41$, $SD = 1.14$) versus a female-founded technology start-up ($M = 4.12$, $SD = 1.00$), but the test remains not significant. Thus, Hypothesis 1C was rejected.

In analyzing whether male applicants have an increased intent to pursue to male-founded start-ups than female-founded start-ups, in Hypothesis 2A, I performed an analysis of covariance. The results did not support the assumption, leading to the hypothesis not being supported. Similarly, to Hypothesis 1A, the covariance, independent variable, and de-

**Table 3:** Means, Standard Deviations, and Correlations

| Variable | $M$ | $SD$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Participant age[a] | 30.17 | 13.87 | – | | | | | | | |
| 2. Participant gender[b] | 1.59 | 0.49 | -.07 | – | | | | | | |
| 3. Prestige[c] | 4.62 | 1.08 | -.03 | .03 | – | | | | | |
| 4. Person Organization Fit[c] | 5.20 | 1.14 | -.03 | -.01 | .36** | – | | | | |
| 5. Anticipated Belongingness[c] | 4.66 | 1.19 | .01 | .03 | .37** | .71** | – | | | |
| 6 Person supervisor fit[c] | 4.65 | 1.12 | .02 | .08 | .44** | .57** | .66** | – | | |
| 7. General Attractiveness[c] | 4.69 | 1.32 | -.03 | -.03 | .55** | .63** | .78** | .65** | – | |
| 8. Intent to pursue[c] | 4.46 | 1.15 | .01 | .07 | .56** | .49** | .60** | .54** | .76** | – |

*Note.* $N = 197$. [a]Age in years (1-99). [b]1 = 'male', 2 = 'female'. [c]Measured on 7-point Likert scales (1 = 'strongly disagree'; 7 = 'strongly agree'). *$p < .05$, **$p < .01$ (two-tailed).

pendent variable being the same, the main difference in Hypothesis 2A is the sample of male participants and the male start-up founder preference. There were no significant differences in the male applicants intent to pursue ($F(1,78) = .08$, $p = .79$, $\eta^2 = .001$) to male-founded start-ups than female-founded start-ups. Validating this fact, the mean is higher for female-founded start-ups ($M = 4.41$, $SD = 1.31$) than male-founded start-ups ($M = 4.29$, $SD = 1.14$), which is the complete opposite assumption made in the hypothesis. Additionally, the covariate, the 'start-up field context', was found to be significant ($p = .02$). Consequently, Hypothesis 2A was rejected. Refer to Table 5 for the means and standard deviations found for Hypothesis 2A, 2B, and 2C.

Hypothesis 2B predicted male applicants have an increased intent to pursue to a technology context start-up versus a sustainable context start-up. The results from the analysis of covariance did not support the assumption, ergo the hypothesis was not supported. Hypothesis 2B is notably the last hypothesis with a covariance included to test the hypothesis, more specifically the covariance being the 'founder gender' variable, and the independent variable was the 'start-up field context'. A significant difference did in fact occur with the male applicant's intent to pursue ($F(1,78) = 5.64$, $p = .02$, $\eta^2 = .07$) to a technology context start-up versus sustainable context start-up. In contrast to previous expectations, the technology context start-ups ($M = 3.99$, $SD = 1.20$) mean is lower than the sustainable context start-up ($M = 4.64$, $SD = 1.20$), but the hypothesis is still not supported. Hence, Hypothesis 2B is rejected.

Formulated from the previous hypotheses, Hypothesis 2C, predicted male applicants have an increased intent to pursue to start-ups founded by males with a technology context. I performed a two-way analysis of variance, and the results did not support the assumption, hence the hypothesis was not supported. Unlike the last hypothesis, there were no significant differences in the male applicants' intent to pursue ($F(1,77) = 1.96$, $p = .17$, $\eta^2 = .03$) to start-ups founded by males with a technology context. Much like the last two-way analysis of variance performed, there were no covariates since both variables, Founder Gender and Start-up Field

Context, are independent variables, and therefore no risk of making a difference. Male applicants have a lower mean towards start-ups founded by males with a technology context ($M = 3.71$, $SD = 0.90$) versus a male founded sustainable start-up ($M = 4.81$, $SD = 1.09$) which has the highest mean recorded, but the test remains not significant. The second-highest mean recorded is a female-founded technology start-up ($M = 4.21$, $SD = 1.37$), and a female-founded sustainable start-up ($M = 4.54$, $SD = 1.27$), still the test remains not significant. Thus, Hypothesis 1C was rejected.

In testing whether the female applicants have decreased intent to pursue when the founder of the sustainable context start-up is male as compared to female, Hypothesis 3, I performed an analysis of variance. The results did not support the assumption, leading to the hypothesis not being supported. A significant main effect did not occur when investigating if female applicants have decreased intent to pursue when the founder of the sustainable context start-up is male ($F(1,54) = 2.25$, $p = .14$, $\eta^2 = .04$) as compared to females. As expected, female applicants do have a lower mean ($M = 4.59$, $SD = 1.08$), decreased intent to pursue, when the founder of the sustainable context start-up is male as compared to female ($M = 5.00$, $SD = 0.97$), but the test remains not significant. Consequently, Hypothesis 3 was rejected. Refer to Table 6 for the means and standard deviations found for Hypotheses 3 and 4.

Hypothesis 4 predicted male applicants have decreased intent to pursue when the founder of the technology context start-up is female as compared to male. The results from the analysis of variance did not support the assumption, ergo the hypothesis was not supported. A significant difference did not occur when investigating if male applicants have decreased intent to pursue when the founder of the technology context start-up is female ($F(1,33) = 1.52$, $p = .23$, $\eta^2 = .04$) as compared to males. In contrast to previous expectations, male applicants do have a higher mean, increased intent to pursue, when the founder of the technology context start-up is female ($M = 4.21$, $SD = 1.37$) as compared to male ($M = 3.71$, $SD = 0.90$). Therefore, Hypothesis 4 is rejected. The final results of the hypothesis testing for all hy-

**Table 4:** Means and Standard Deviations for Female Participants in Hypothesis 1A, 1B, and 1C

| Dependent variables | Hypothesis 1A | | | | Hypothesis 1B | | | | Hypothesis 1C | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Female founder (n = 49) | | Male founder (n = 67) | | Tech start-up (n = 60) | | Sustainable start-up (n = 56) | | Female/ Tech start-up (n = 23) | | Male/ Tech start-up (n = 37) | | Female/ Sustainable start-up (n = 26) | | Male/ Sustainable start-up (n = 30) | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Intent to Purse | 4.59 | 1.07 | 4.49 | 1.11 | 4.30 | 1.09 | 4.78 | 1.04 | 4.12 | 1.00 | 4.41 | 1.14 | 5.00 | .97 | 4.59 | 1.08 |

*Note.* $N = 116$. In a between-subjects experiment, participants were shown a start-up advertisement with either a female founder of a technology start-up, a male founder of a technology start-up, a female founder of a sustainable start-up, or a male founder of a sustainable start-up. Participants were then asked to answer questions pertaining to their personal organizational attraction towards the start-up advertisement shown. Answers were rated on a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).

**Table 5:** Means and Standard Deviations for Male Participants in Hypothesis 2A, 2B, and 2C

| Dependent variables | Hypothesis 2A | | | | Hypothesis 2B | | | | Hypothesis 2C | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Female founder (n = 49) | | Male founder (n = 32) | | Tech start-up (n = 35) | | Sustainable start-up (n = 46) | | Female/ Tech start-up (n = 20) | | Male/ Tech start-up (n = 15) | | Female/ Sustainable start-up (n = 29) | | Male/ Sustainable start-up (n = 17) | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Intent to Purse | 4.41 | 1.31 | 4.29 | 1.14 | 3.99 | 1.20 | 4.64 | 1.20 | 4.21 | 1.37 | 3.71 | .90 | 4.54 | 1.27 | 4.81 | 1.09 |

*Note. N* = 81. In a between-subjects experiment, participants were shown a start-up advertisement with either a female founder of a technology start-up, a male founder of a technology start-up, a female founder of a sustainable start-up, or a male founder of a sustainable start-up. Participants were then asked to answer questions pertaining to their personal organizational attraction towards the start-up advertisement shown. Answers were rated on a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).

potheses are outlined in Table 7. Moreover, Table 8 reports the fixed sample and significance testing results for each variable used in the hypothesis testing.

## 5.2. Exploratory Analysis

After completing hypothesis testing that resulted in one significant result, I wanted to further explore whether the 'General Attractiveness' variable would directly impact either of the variables, founder gender or field context start-up, in the hypotheses. General attractiveness and intent to pursue were both very highly correlated after running a correlation analysis, for that reason they are the pronounced dependent variables. In response to the other five measures having either a considerably low or moderate correlation, an exploratory analysis was not further conducted on them. Table 9 summarizes the exploratory analysis hypothesis testing results after performing a mix of multivariate analysis of variance, multivariate analysis of covariance, and two-way multivariate analysis of variance. In parallel to the former hypothesis testing, the only hypotheses that include a covariate are Hypothesis 1A, 1B, 2A, and 2B due to the similar reason that there is potential that the unused variable in the hypothesis will make a difference in the used variables relationships, and both Hypothesis 1C and 2C were tested by a two-way multivariate analysis of variance.

The explorative analysis showed similar results to the initial hypothesis testing with all of the hypotheses' final results, significant main effects, or in most cases lack of significant main effects, being exactly the same. Only in one instance, Hypothesis H2A, did the means trend vary between the dependent variables, 'general attractiveness' found that male applicants have a higher mean, increased intent to pursue, to male founded start-ups ($M = 4.80$, $SD = 1.30$) than female ($M = 4.70$, $SD = 1.35$) founded start-ups, but the test remains not significant. Despite the fact that the results are almost identical to the original hypothesis testing, the exploratory analysis reinstated the strength of the results of the tests for each variable and how closely related the survey participants intent to pursue and general attractiveness towards a company are.

## 6. Discussion

The aim of the study was to explore how potential applicants show a different organizational attraction to a start-up when founded by a male versus female in a technology or sustainable field. There was a predominant assumption that both female and male applicants would have an increased intent to pursue start-ups with founders of the same gender and start-ups that match their gender-stereotyped fields. The same was assumed for how applicants would have a decreased intent to pursue start-ups that did not mirror founders with their same gender of the according gender-stereotyped field. These assumptions originated in the "birds of a feather flock together" axiom, detailing practices compatible in the homophily theory, that is ultimately, likeness

creates a bond or there is a prejudice which brings alike persons to one another (McPherson, Smith-Lovin, & Cook, 2001).

In pursuing these assumptions, I conducted an online experiment to test the hypotheses. Unforeseeably, the study shows that the majority of the stated assumptions show no significance regarding my proposed and tested hypotheses. Female applicants based on the results from Hypothesis 1A, 1B, 1C, and Hypothesis 3 generally care more about the start-up field (sustainable or technology) rather than the gender (male or female) of the start-up founder, respective to the means, female applicants preferred a female-founded start-up, a sustainable context start-up, and a female-founded sustainable context start-up. Hypothesis 2B was the one (and only) hypothesis that was accepted and showed significant differences among the variables. Thus, female applicants have an increased intent to pursue to a sustainable context start-up versus a technology context start-up, which is true. Interestingly, for female applicants in Hypothesis 2C, the second-highest mean, for which female applicants had an increased intent to pursue to start-ups founded by males with a sustainable context. Hence, supporting the observation in the hypothesis testing that female applicants care more about the start-up field context, specifically the sustainable context since this was the preferred field context. The lowest mean recorded for female applicants in Hypothesis 2C based on the independent variables 'founder gender' and 'start-up field context' were start-ups founded by females with a technology start-up context. Assisting the previously held notion about the gendered start-up stereotypes in the sustainable fields being more attractive for females.

The male applicants in Hypothesis 2A, 2B, 2C, and Hypothesis 4 showed dissimilar intent to pursue start-ups with founders of the same gender and start-ups that match their gender-stereotyped fields than what was expected in the hypotheses. Male applicants, likewise, to the female applicants, cared more about the start-up field rather than the founder's gender, but contingent on the means, preferred a female-founded start-up, a sustainable context start-up, and a male founded sustainable context start-up. Hypothesis 2B had a significant difference between the male applicant's intent to pursue to a technology context start-up versus sustainable context start-up; Unexpectedly, the hypothesis proposed male applicants have an increased intent to pursue to a technology context start-up when on the contrary, male applicants have an increased intent to pursue to a sustainable context start-up. Comparably, male applicants in Hypothesis 2C had a similar preference, like the female applicants in Hypothesis 1C, with the highest mean indicating male applicants have an increased intent to pursue to start-ups founded by females with a sustainable context and following closely behind that mean, were start-ups founded by males with a sustainable context. The lowest mean recorded for the male applicants in Hypothesis 2C was the exact opposite of what was anticipated, contingent on the independent variables 'founder gender' and 'start-up field context', were start-ups founded by males with a technology context. In essence,

**Table 6:** Means and Standard Deviations for Female Participants with a Sustainable Start-up Advertisement in Hypothesis 3 and Male Participants with a Technology Start-up Advertisement in Hypothesis 4

| Variables | Hypothesis 3 | | | | Hypothesis 4 | | | |
| Variables | Female founder ($n = 26$) | | Male founder ($n = 30$) | | Female Founder ($n = 20$) | | Male founder ($n = 15$) | |
| Dependent variables | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ | $M$ | $SD$ |
| Intent to Purse | 5.00 | .97 | 4.59 | 1.08 | 4.21 | 1.37 | 3.71 | .90 |

*Note.* For Hypothesis 3, $N = 56$. For Hypothesis 4, $N = 35$. In a between-subjects experiment, participants were shown a start-up advertisement with either a female founder of a technology start-up, a male founder of a technology start-up, a female founder of a sustainable start-up, or a male founder of a sustainable start-up. Participants were then asked to answer questions pertaining to their personal organizational attraction towards the start-up advertisement shown. Answers were rated on a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).

**Table 7:** Results of Hypothesis Testing

| | | | | | |
|---|---|---|---|---|---|
| *Dependent Variable- Intent to Pursue (ITP)* | | | | | |
| Hypothesis | Statistical Method | DV | Covariate | Significance Test | Hypothesis Final Result |
| H1A | ANCOVA | ITP | Field_Context | .76 | Rejected |
| H1B | ANCOVA | ITP | Founder_Gender | .02* | Accepted |
| H1C | Two-way ANOVA | ITP | – | .08 | Rejected |
| H2A | ANCOVA | ITP | Field_Context | .79 | Rejected |
| H2B | ANCOVA | ITP | Founder_Gender | .02* | Rejected |
| H2C | Two-way ANOVA | ITP | – | .17 | Rejected |
| H3 | ANOVA | ITP | – | .14 | Rejected |
| H4 | ANOVA | ITP | – | .23 | Rejected |

*Note.* $N = 197$. *$p < .05$.

**Table 8:** Significance Test for each Hypothesis (varying independent and dependent variables per hypothesis)

| Hypothesis | Sample | | Field_ Context | Founder_ Gender | Field_Context* Gender_Founder | Significant Result |
|---|---|---|---|---|---|---|
| | $N$ | Gender | | | | |
| 1A | 116 | Female | .02* | **.76** | – | None |
| 1B | 116 | Female | **.02**\* | .76 | – | Significant |
| 1C | 116 | Female | .01* | .75 | **.08** | None |
| 2A | 81 | Male | .02* | **.79** | – | None |
| 2B | 81 | Male | **.02**\* | .79 | – | Significant |
| 2C | 81 | Male | .01* | .67 | **.17** | None |
| 3 | 56 | Female | – | **.14** | – | None |
| 4 | 35 | Male | – | **.23** | – | None |

*Note.* In a between-subjects experiment, participants were shown a start-up advertisement with either a female founder of a technology start-up, a male founder of a technology start-up, a female founder of a sustainable start-up, or a male founder of a sustainable start-up. Participants were then asked to answer questions pertaining to their personal organizational attraction towards the start-up advertisement shown. Answers were rated on a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). *$p < .05$. The independent variable's $p$-value is bolded for each hypothesis.

the male applicants shattered the status quo regarding their lack of intent to pursue start-ups that align more with their gender-stereotyped fields and founders of the same gender.

Furthermore, the gender of the founder is not significant for the female applicants, nor the male applicants. Both the female and male applicants showed major interest in

**Table 9:** Hypothesis Testing and Exploratory Analysis

| Dependent Variable- Intent to Pursue (ITP) & General Attractiveness (GA) | | | | | | |
|---|---|---|---|---|---|---|
| Hypothesis | Statistical Method | DV | Covariate | Significance Test | | Hypothesis Final Result |
| | | | | ITP | GA | |
| H1A | MANCOVA | ITP + GA | Field_Context | .76 | .73 | Rejected |
| H1B | MANCOVA | ITP + GA | Founder_Gender | .02* | .04* | Accepted |
| H1C | Two-way MANOVA | ITP + GA | – | .08 | .06 | Rejected |
| H2A | MANCOVA | ITP + GA | Field_Context | .79 | .63 | Rejected |
| H2B | MANCOVA | ITP + GA | Founder_Gender | .02* | .01* | Rejected |
| H2C | Two-way MANOVA | ITP + GA | – | .17 | .46 | Rejected |
| H3 | MANOVA | ITP + GA | – | .14 | .12 | Rejected |
| H4 | MANOVA | ITP + GA | – | .23 | .83 | Rejected |

*Note.* $N = 197$. *$p < .05$.

the start-up field contexts, primarily the sustainable context start-up. Female applicants aligned more with the expectations that were formed based on the "birds of a feather flock together" axiom expressed in the homophily theory. Male applicants completely diverged from the prior presumptions and produced confounding results in the hypothesis testing, which creates a lot of room for further exploration.

6.1. Theoretical Implications

Reflecting on this study, some contributions should be accounted for, in both research and in practice. In respect to theory, keep in mind the majority of the results did not appear to be significant, so one can only vaguely discuss the theoretical implication based on differences in means. For the most part, female applicants held more stereotypical congruence than male applicants. Firstly, female applicants confirmed Heilman's (1983) lack of fit theory by having increased intent to pursue to a sustainable context start-up versus a technology context start-up, which was proven to be significant; Thus, demonstrating the impact "when women compare their personal characteristics with the stereotypically masculine characteristics of career opportunities, the mismatch reduces their interest in pursuing such opportunities" (Heilman, 1983; Hentschel et al., 2020, p. 582). Male applicants display the exact opposite effect that is not in accordance with the theory because based on the theory a significant result in the opposite direction would be expected. In the study, the male applicants have an increased intent to pursue female-founded start-ups, and on top, they do not have a decreased intent to pursue when the founder of the technology context start-up is female, again this was shown to not be significant.

Secondly, Bandura's (1977) self-efficacy theory holds true as well for the female applicants in this case but not for the male applicants. The self-efficacy theory is true for the female applicants since it was previously proposed women have more of a likelihood than men, to have a lower self-efficacy in in technology jobs and will try to avoid such occu-

pations, and the female applicants accordingly had less of an intent to pursue to the technology context start-up (Tellhed et al., 2016). Again, male applicants did the reverse and had increased intent to pursue to sustainable context fields, but it was previously mentioned that men view their obtainable success equally whether in a field or career that is female or male dominated (Betz & Hackett, 1981; Bridges, 1988; Matsui et al., 1989; Tellhed et al., 2016). According to Tellhed et al. (2016), the reasoning behind the male applicant's intent to pursue to a sustainable context start-up may be due to "men seldom suffer from gender-related stereotype threat, and their self-efficacy may be protected by the strong association between male gender and competence" (Fiske, Cuddy, Glick, & Xu, 2002; Pillaud, Rigaud, & Clémence, 2015; Tellhed et al., 2016, p. 92).

Lastly, the homophily theory, which can be applied on both the organizational and individual levels. The organizational level is based on "similarity of member characteristics" in a group composition (Ruef et al., 2003, p. 197), so based on how similar an applicant feels toward the members in the organization. The theory on the individual level is described in the axiom "birds of a feather flock together", meaning people are attracted to similar people, thereby applicants should be attracted to similar individuals (Phillips et al., 2013). Based on the female and male applicants' study results, this theory was proven to not be significant on either level or accepted. The founder's gender was not held in the same regard as the startup context, in consequence rejecting the homophily theory in this study. A possible reason as to why there was no significance regarding gender should be further investigated, especially since the male applicants were showing more of an attraction to female founders versus male founders and sustainable startup fields versus technology fields, but when it came to joining both the founder's gender and field context variables the male applicants seemed to prefer startups founded by males with a technology context. Even with the study mostly rejecting the homophily theory, there is an opportunity to explore these

opposing preferences in the male applicants. As previously mentioned by Dietz et al. (2002), men can without a negative response pursue a career in sustainable start-ups, just as long as they reaffirm their masculinity, so they can avoid having to endure any gender identity maintenance (Dietz et al., 2002). This could be the main reason why men have an increased intent to pursue to a sustainable start-up context, and since men hold stronger "stereotypical views in the workplace", especially when it comes to leadership roles where men prefer male applicants over female applicants, this could contribute to why male applicants had an increased intent to apply to start-ups founded by males with a sustainable context (Rice & Barth, 2016, p. 4). The female applicants were also more attracted to the sustainable context start-up, which is viewed as predominantly female-dominated, but there was still a lack of significance regarding the founder's gender. With this being said, the study challenges the validity of the homophily theory and should be further scrutinized, some reasons for this are explored in the Limitations and Directions for Future Research section (p. 32).

6.2. Practical Implications

Bridging the gap from the theoretical to the practical side, the Master's Thesis provides a basis for understanding what organizationally attracts potential applicants and how the startup recruitment process can be improved for all parties involved. As a start-up recruiter, finding a fit between the applicant and the organization should be prioritized, and this Master's Thesis only offers a weak insight that gender matters for the applicant-supervisor fit, or applicant-startup founder fit. Surprisingly, as observed in the study, the factor that had the greatest effect on the applicant's intent to pursue to the start-up was the start-up field, namely a sustainable or technology field, and depending on the applicant's gender the start-up field would either be viewed as an accepted or unaccepted fit, thus leading to an increased intent to pursue to the start-up. In comparison to the field, the gender of the founder did not have a significant effect. Therefore, it would be advisable to emphasize the field of the start-up more so than the gender of the founder. Following this Master's Thesis, companies would be well advised to appear more sustainable to applicants.

The burning question is, should a start-up recruiter try to find potential applicants who feel like they are a good fit (potentially re-establishing stereotypes), or should the start-up recruiter be more focused on appearing more in favor of attracting diverse applicants? If a start-up recruiter (or start-up founder) were to build their entire recruiting process based on trying to find potential applicants who feel like they are a good fit, they would most likely ensure that female applicants are only matched with a female founder of a sustainable context start-up, and male applicants are only matched with either a male founder of a sustainable context start-up or a female founder of a sustainable start-up; Notably, risking re-establishing stereotypes and continuing the gender inequality social phenomenon. The alternative course of action would be for the applicant recruiter to focus on appearing

more in favor of attracting diverse applicants, by fraternizing a diverse mix of genders in each gendered field with the hopes of shattering any gender association in a given start-up field. A few examples of this would be female applicants being matched with a male founder of a sustainable or technology context start-up and female applicants being matched with a female founder of a technology context start-up, or male applicants being matched with a female founder of a sustainable or technology startup and male applicants being matched with a male founder of a sustainable context start-up.

Nevertheless, there is an extensive amount of research emphasizing the amount of growth and change in start-ups and entrepreneurship, as well as efforts in obliterating the lack of gender diversity in start-ups. Even though research has repetitively shown the stronghold that social role theory places on such professions in entrepreneurship, predominantly viewed as male, there is a need to consider other factors that can assist towards gender equality. Moreover, applicant recruiters can guide and pave the way in future start-up recruitment and help find a desirable fit in a greater quantity of start-ups for potential applicants that are not solely dependent on stereotypical beliefs.

6.3. Limitations & Directions for Future Research

In spite of the fact, the Master's Thesis at present was intending to produce worthy contributions concerning the applicants' organizational attraction towards the entrepreneur's gender and gendered start-up field, there is still room for improvement, further outlined as limitations, to better future research.

First of all, the main principle of stereotypes may have a considerable effect on my study, since stereotypes are bound to expectations by society, and my study investigates not one stereotypical phenomenon, yet a handful. Possibly, these strong stereotypes could influence the participants' responses since their perception of societal norms may differ from their personal views, but their responses are more so a representation of their observed societal accepted norms rather than their personal views. In future research, there should be further interest in finding ways to better evaluate the participant's personal views versus societal accepted views. I deliberately did not make this distinction in the study, for I was investigating how male and female applicants' intent to pursue to a start-up varies based on these stereotypically held beliefs.

Secondly, regarding the online experiment, the sample size seemed like a shortcoming in some of the data analysis results, with a few hypotheses showing very close values in the significance test towards potentially being accepted if maybe a larger sample size was implemented. Certainly, the sample size used in the experiment at hand was guaranteed as sufficient with 246 total participants, nevertheless, there is no harm in having more experiment participants. Moreover, the experiment was not a perfect 50:50 ratio between male and female participants, thus potentially skewing the conclusions drawn since there were more female study partici-

pants than male study participants, so increased heterogeneity is advisable. Even with this in mind, the male participants were already indicating strong opposing results to the stated hypotheses. It would be very fascinating if a future similar research study with a bigger sample size was conducted, and the results would be compared to my previously held Master's Thesis data analysis results.

Thirdly, the predominant lack of women in start-ups may have affected the participants' consideration towards their intent to pursue to a female-founded start-up, in the case that the participant was not generally familiar or has not witnessed such representation in the start-up industry. Accordingly, an adverse effect can occur prior to the survey questioning, more explicitly during the vignette introduction of a female-founded start-up. Likewise, another such effect that can occur regarding the vignette profile is if the participants find a male-founded sustainable start-up too unconventional, prompting any form of genuine acceptance of the vignette as unrealistic. Future research should identify early in the study which participants can believe every detail of the vignette profile, by questioning each participant on whether they view the vignette as a realistic profile in society, or not. Further one could design vignettes that include more stereotypical wording, to measure stronger effects for the theories. Homophily theory says that people stick together like birds of a feather, but maybe for participants, it was too difficult to relate to the abstract founders in the vignettes because they were described with minimal gendered detail.

Fourthly, the mobility industry chosen as the gender-neutral industry in the vignettes could have posed as a controversial industry for participants. Besides the mobility industry being known for technological advancements and innovations and is recognized as a crucial player towards a globally sustainable future. Participants may either disapprove or lack interest in technology mobility start-ups, especially when the world is experiencing a global pandemic where people may not be actively considering mobility options, to the point that they have barely any attraction to the mobility industry nor working in a mobility start-up. For this reason, future research should consider other gender-neutral industry options that may be less contentious and align more with participants' interests in newer and compelling industries.

Fifthly, the sample was not an accurate representation of the diverse work backgrounds of most job applicants, this factor was drawn from 97% of the experiment's sample having received higher education (bachelor's degree or higher). This is an abnormally high number of participants with such an education level and has the potential to completely alter the survey results, if in this case, receiving higher education would be found to make a considerable difference towards how an applicant's intent to pursue towards a start-up changes. Besides, this would be a fascinating insight to dive deeper into for a future research study. All in all, I would advise maintaining a heterogenous education level in the sample size to better represent the general public, not just the highly educated individuals in society in future research.

Aside from the previously raised limitations and recommendations for future research, the Master's Thesis provides a valuable foundation for further exploration in applicant recruitment, gender stereotypes, and gendered fields.

## 7. Conclusion

In route to the end of my Master's Thesis, I sought to explicate the effect the founder's gender and gendered start-up fields has on potential applicants' motivational attraction to a start-up. Despite the main findings providing barely any significant results, noteworthy realizations were occurring in the data showing that (1) both female and male applicants valued the start-up field more than the founder's gender, (2) male applicants have an increased intent to pursue to female-founded start-ups, sustainable context start-up, and a male founded sustainable context startup, when (3) female applicants have an increased intent to pursue to female-founded start-ups, sustainable context start-up, and a female-founded sustainable context start-up. The exploratory analysis reaffirmed the strength and validity of the hypotheses results when measuring potential applicants 'intent to pursue', since the 'general attractiveness' measure presented very similar, almost identical, results, and only reported a higher mean in "general attractiveness" for male applicants preferring male founded start-ups than female-founded start-ups (H2A). Overall recapping, the founder's gender, and gendered start-ups fields are affecting the potential applicant's organizational attraction to the start-up and should be further investigated in future research.

In this Master's Thesis, I challenge several gender theories and propose a few practical tips on how to find better-fitting applicants. The experiment elicited both confounding and desirable insights about the varying organizational attraction among male and female applicants, in part, due to the differing start-up fields and founders, thus mainly, the influence gender stereotypes play. I hope to inspire future research to delve deeper into the connection between start-up applicant recruitment, gender stereotypes, and gendered fields.

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# Innovation Performance of Family and Founder Firms: Empirical Evidence from German Listed Companies

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## Abstract

Based on the agency perspective and the resource-based view of the firm, this study explores the impact of lone founder and family influence on innovation input and innovation output. By separating the lone founder and family effect into ownership, management, and governance influence dimensions, we analyze a panel data set of 165 German listed companies from 2013 through 2017. We first investigate R&D intensity in lone founder and family firms versus other firms by using investments in research and development as a measure for innovation input. Secondly, we apply a negative binomial regression model to analyze R&D productivity within the three types of firms by proxying innovation output with the filed number of granted patents within a certain year. According to the results, we mainly find that founder firms superiorly invest in innovation and strengthen their competitive position in the market through their entrepreneurial orientation. Family firms, on the other hand, might weaken future growth potential as they invest less in R&D and are not able to convert this lower input in superior innovation output.

*Keywords:* Lone founder firms; Family firms; Innovation performance; R&D intensity; R&D productivity.

## 1. Introduction

In the highly dynamic and uncertain twenty-first century, innovation is essential for survival (Ortiz-Villajos & Sotoca, 2018, p. 1433f.). Therefore, firms must establish an entrepreneurial mindset that enables them to identify and seize opportunities in times of uncertainty (Shane & Venkataraman, 2000, p. 217ff.). In this context, firms ownership structures seem to be of great importance: previous studies show that a firm's ownership structure has an impact on diversification plans (Anderson & Reeb, 2003, p. 667ff.), risk attitude (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007, p. 106ff.) and investment horizons (Miller, Le Breton-Miller, Lester, & Cannella, 2007, p. 829ff.). Since returns of innovation investments are highly skewed and uncertain (Scherer & Harhoff, 2000, p. 565), the ownership structure of firms is also likely to affect innovation investment and outcomes, as different risk preferences exist. As the influence cannot only be explained by the capital holders (Donckels & Lambrecht, 1999, p. 186), but also by the people who actively manage and monitor the firm (Filbeck & Lee, 2000, p. 212f.; Anderson & Reeb, 2003, p. 664), it is likely

that, in addition to the ownership influence dimension, the management and governance dimensions also impact innovation decisions. Hereby, strong conceptual reasons suggest that family and lone founder involvement in ownership, management, and governance determines distinctive incentives (Fama & Jensen, 1983, p. 315f.), and affects resource management and deployment (Sirmon & Hitt, 2003, p. 339ff.), leading to unique advantages or disadvantages that may affect the innovation process (De Massis, Frattini, Pizzurno, & Cassia, 2015, p. 2).

Thereby, agency theory serves as a commonly used theory to explain various aspects of lone founder and family firm performance differences to other firms (Block, 2012, p. 251f.; Chrisman, Chua, & Litz, 2004, p. 337ff.). Based on agency theory, it is argued that loss-averse families prefer sure gains over risky investment opportunities when they try to protect their family-specific wealth (Chrisman & Patel, 2012, p. 981f.). This potential "creative self-destruction" is additionally explained by the fact that families accept an increased performance hazard in order to maintain discretionary power in the firm (Gómez-Mejía et al., 2007, p. 117; Kotlar, Massis, Frattini, Bianchi, & Fang, 2013, p. 1078). In

contrast, literature suggests that the situation differs for lone founder firms as they have a proven track record in growing their own business (Miller, Le Breton-Miller, & Lester, 2011, p. 8) and therefore show an openness towards risky innovation projects (Block, Miller, Jaskiewicz, & Spiegel, 2013, p. 181). The comprehensive understanding of the firms' underlying processes and the typically high shareholdings are likely to result in less free-rider problems, as is the case with firms owned by dispersed shareholders (Maug, 1998, p. 67). The extraordinary commitment of founders in their firms may further lead to decreasing agency costs (Nelson, 2003, p. 710).

However, differences between lone founder, family and other firms do not only emerge because of agency cost differences – resources also play a major role in innovation performance. Barney (1991, p. 99ff.) provides a theoretical framework that helps to understand the effects of how unique bundles of resources and capabilities affect the way lone founder and family firms manage and deploy innovation input (Sirmon & Hitt, 2003, p. 339ff.). Based on the resource-based view of the firm, it is argued that, for family firms, these unique resources and capabilities result from the interaction of family involvement and the firms' system (Cabrera-Suárez, de Saá-Pérez, & García-Almeida, 2001, p. 38). Family firms' advantages in human and relational capital is assumed to result in valuable intangible resource advantages (Cabrera-Suárez et al., 2001, p. 39f.), which are likely to result in superior innovation output. In contrast, founders' energy, motivation, experience, and expertise flow into the daily innovation endeavors (Block et al., 2013, p. 185). They act as entrepreneurs, providing unique technical knowledge and a foundation for growth and innovation that enables them to educate next generation managers in how to implement innovations efficiently (McConaughy & Phillips, 1999, p. 130). This unique knowledge in combination with their entrepreneurial attitude is likely to result in an attitude that values growth and innovation (Block, 2012, p. 249).

Following Griliches (1998, p. 17ff.), the underlying study distinguishes between innovation input and innovation output: firms' investment in research and development (R&D) measures innovation input (Anderson, Duru, & Reeb, 2012, p. 1747), while the filed number of granted patents within a certain year serves as a proxy for innovation output (Duran, Kammerlander, van Essen, & Zellweger, 2016, p. 1235). This paper aims to analyze the differences in R&D intensity and R&D productivity in different types of firms. The question of how lone founder or family influence affects innovation behavior is addressed in the underlying study. Therefore, the study refers to three types of firms; lone founder, family and other firms. The data used for this study was obtained from various databases such as the AMADEUS database, the Hoppenstedt database and from financial reports of the respective firms to acquire extensive firm level data. Based on this data, the ownership, management, and governance effects on the 165 sample firms' R&D intensity and R&D productivity is analyzed by using panel data regression models. By applying fixed and random effects panel data regressions, the first part of the underlying study shows that founder governance

has a positive effect on R&D intensity, while family management seems to be negatively correlated. In the second part, by analyzing R&D productivity, the main findings show consistent results for the founder management and governance dimension, implying that active lone founder firms are able to produce superior innovation output compared to other firms. For family firms, on the other hand, no consistent effects can be observed, such that it can be concluded that family firms do not represent efficient innovators.

The underlying study is particularly based on the paper of Block (2012, p. 248ff.) in the *Journal of Business Venturing*, which examines the R&D intensity of lone founder and family firms by drawing on the agency theory. By using a data set of 154 firms of the S&P 500 and by applying fixed and random effects panel regression models, he pursues a similar empirical strategy with a comparable data set used in the underlying study. By applying a continuous measure for the ownership influence dimension, Block (2012, p. 254) defines the management dimension in a binary manner, leaving out fine-grained analysis potential. However, the main findings of the underlying study with respect to the family management influence dimension are consistent with the study of Block (2012, p. 256f.), as a significant negative effect can be identified. Block et al. (2013, p. 180ff.) extended the study of Block (2012, 248ff.) by focusing on an innovation output proxy instead of concentrating on innovation input and thus on R&D intensity effects. By applying the same methodology for their variable definition like Block (2012, p. 253f.), they study the economic and technological importance of innovations in lone founder and family firms (Block et al., 2013, p. 180). Here, too, they use a panel data set, but with an increased sample size of 248 firms and 1,659 firm-year observations (Block et al., 2013, p. 185f.). With their negative binomial panel data regression, they find a significant positive effect for the founder management variable, while a significant negative effect is observed for the family management variable. These findings partly coincide with the main findings of the underlying study, as significant positive effects are found for both, lone founder and family management variables. However, the last key paper used in this study to develop a thorough empirical strategy suggests a potential endogeneity relationship between innovation input and innovation output (Matzler, Veider, Hautz, & Stadler, 2014, p. 326). In their study, published in the *Journal of Product Innovation Management*, Matzler et al. (2014, p. 326) focus only on family firms (136 firms and 983 firm-year observations) and apply an instrumental variable two-stage least squares (IV-2SLS) panel regression model to solve potential endogeneity problems regarding firm level R&D intensity. By using an IV-2SLS regression approach for the underlying data set, the results are consistent with the effects that can be found in the study of Block et al. (2013, p. 190). However, the underlying study is expected to be more accurate as it is controlled for potential endogeneity and the three main influence dimensions – ownership, management, and governance – are defined in a continuous manner.

With these results, the paper contributes to the growing

literature on innovation behavior in lone founder and family firms (Block, 2012, p. 248ff.; Block et al., 2013, p. 180ff.; Chen & Hsu, 2009, p. 347; Chrisman & Patel, 2012, p. 976ff.; Duran et al., 2014, p. 1224ff.; Matzler et al., 2014, p. 329ff.). First, using agency theory (Fama & Jensen, 1983, p. 301ff.), mechanisms are discussed that cause differences in agency costs between lone founder and family firms. In addition, differences in innovation output are discussed by drawing on the resource-based view of the firm (Barney, 1991, p. 99ff.), thereby providing mechanisms which cause differences in the second part of the analysis. Second, the use of three different influence dimensions (ownership, management, and governance) allows for a comprehensive analysis and fine-grained comparison of the underlying effects of lone founder and family influence. It is shown that, by continuously coding the influence dimensions, the analysis is meaningful, despite the existence of potential structural differences between the different types of firms analyzed in the paper.

In order to address the gap in the literature regarding the comprehensive distinction between the innovation behavior of lone founder and family firms, this study is divided into six sections. The next section provides an overview of the relevant theoretical frameworks and the existing literature, focusing on the agency concepts and the resource-based view of the firm in order to derive hypotheses for the underlying study. As the burning question of this study is addressed empirically, section three concentrates on the description of the underlying data set and the methods used for the analyses. Section four presents the results of the analyses including several robustness checks and a model which addresses potential self-endogeneity. The fifth section provides a discussion of the main findings and shows implications, limitations, and potential directions for future research. Finally, the study is concluded in the sixth section.

## 2. Theoretical framework and literature review

### 2.1. Innovation input vs. innovation output

When studying firm level innovation, economic literature has long established that there is an important difference between input measures of innovation performance and the innovations a firm produces (innovation output) (Block et al., 2013, p. 180). Innovation input is hereby often defined as a firm's investment that is devoted to the exploitation and exploration of new possibilities (Duran et al., 2016, p. 1226f.). During the innovation process, firm's innovation input is translated into patented knowledge or newly developed products (Schmiedeberg, 2008, p. 1497) – also referred to as innovation output. While R&D investments can lead to a knowledge creation, measures of innovation output deal with the commercialization of knowledge and are therefore of relevance for the firm's economic importance and technological process (Hall, Jaffe, & Trajtenberg, 2005, p. 19; He & Wang, 2009, p. 932). Therefore, in addition to R&D intensity, which is a frequently used proxy for innovation input (Chrisman & Patel, 2012, p. 983), it is also important to capture R&D productivity – defined as the interaction between

R&D input and R&D output (Block, 2012, p. 251). Studying both, innovation input and innovation output becomes particularly relevant, since firms are likely to differ in their efficiency of transforming innovation input into innovation output (Duran et al., 2016, p. 1227). Therefore, the underlying study distinguishes between the R&D intensity of firms, which serves as an indicator for innovation input, and the firm's granted patents filed per year serving as a proxy for innovation output.

For R&D investments, agency theory indicates that moral hazard problems exist due to different risk preferences or investment horizons of owners and managers (Anderson et al., 2012, p. 1746f.). Thus, the separation of ownership and management into two groups typically involves different risk preferences (Jensen & Meckling, 1976, p. 309): according to Lee and O'Neill (2003, p. 213), firm owners are more risk taking than managers as they are typically well diversified shareholders. These differences in risk propensity are particularly pronounced in the case of R&D investments, as these are high-risk and high-skewed investments with uncertain outcomes (Scherer & Harhoff, 2000, p. 565). This overall uncertainty leads to potential underinvestment in R&D where managers who make R&D investment decisions are more risk-averse than the firms' owners (Block, 2012, p. 250).[1] In addition, owners have a long-term perspective and seek for investments that ensure firms' long-term health and competitiveness (Anderson et al., 2012, p. 1746). Managers, on the other hand, want to keep their jobs and promote a high reputation and therefore often want to achieve positive short-term results (Hirshleifer & Thakor, 1992, p. 465). These two arguments are consistent with an underinvestment in R&D. Besides a resulting underinvestment, the existence of moral hazard can also lead to an overinvestment in R&D (Block, 2012, p. 250). Jensen's (1986, p. 323ff.) "free cash flow hypothesis", which primarily builds on the agency theory, sheds light on the potential positive relationship. In order to increase their overall wealth, managers could invest the firm's free cash flow in unprofitable investment opportunities instead of paying out the excess liquidity to shareholders (Jensen, 1986, p. 327; Vogt, 1994, p. 3). In short, the firm's moral hazard problem can result in under- and overinvestment in R&D projects.[2]

What agency theory cannot explain is how firms manage the transfer of innovation input into innovation output (Matzler et al., 2014, p. 320). A more appropriate theory to explain how capabilities shape the innovation output of firms is the resource-based view of the firm (Matzler et al., 2014, p. 320). The resource-based view of the firm is able to explain differences in the firm's competitive advantage due to the heterogeneous distribution of strategic resources (Barney, 1991, p. 99). Thus, these valuable, rare, inimitable,

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[1]Typically, R&D investment decisions are made by firm managers and executives (Block, 2012, p. 250).

[2]Note that both, moral hazard driven over- and underinvestment strategies are not value maximizing for the owners of the firm (Block, 2012, p. 250).

and non-substitutable resources are able to explain differences in the innovation output of firms (Barney, 1991, p. 99), as different resources applied by firms result in different innovation outcomes (De Massis, Frattini, & Lichtenthaler, 2012, p. 21). As innovation output is not only determined by the strategic choices of a firm but also by its strategic activities, processes, and capabilities (Matzler et al., 2014, p. 322), unique family resources are likely to influence innovation output (Llach & Nordqvist, 2010, p. 394). Therefore, the underlying study draws on the agency theory when dealing with R&D intensity, while the resource-based view of the firm serves as the theoretical framework for innovation output and thus for the patent count regression in the second part of the study.

## 2.2. Distinction between family and lone founder firms

The distinction between family and lone founder firms was introduced by Miller et al. (2007, p. 836) and is relatively new in the literature. Depending on the respective country, the corporate governance system as well as the type of companies studied, the definition of family firms varies in the literature (Miller et al., 2007, p. 831). For example, Anderson and Reeb (2003, p. 661) and La Porta, Lopez-De-Silanes, and Shleifer (1999, p. 480f.) count firms as family firms in which the founder is involved in the business, whereas Llach and Nordqvist (2010, p. 383) base their definition of family firms on the firm's own perception. These different definitions of family firms applied in literature therefore lead to an in- or decrease in the proportion of family firms in the sample (Llach & Nordqvist, 2010, p. 383) and to a variation in the performance of these firms (Miller et al., 2007, p. 831).

To reduce these variations, Miller et al. (2007, p. 836) defined family firms as firms where multiple members of the same family are involved as major owners or managers. In contrast, lone founder firms are defined as firms in which the founder (founder team) is involved in an influencing position in the firm and no relatives of the founder are involved in the business as major owners or managers (Miller et al., 2007, p. 836).[3] To account for the peculiarity of Germany's two-tiered system (Klein, 2000, p. 167), the underlying study analyzes the impact of three influence dimensions – ownership, management, and governance.[4]

As firms mature over time, they lose part of their entrepreneurial orientation (Block, 2012, p. 249). Therefore, the development of a lone founder firm into a family firm could result in structural differences, indicating that these firms might be two distinct types of firms with regard to the influence dimensions of the underlying study (Block, 2012, p. 249). For example, in the sample dataset, lone founder

firms have on average around 2,600 employees, while family firms employ on average around 24,400 employees, suggesting that family firms are around 9 times larger in terms of the number of employees. However, the continuous definition and coding of the three influence dimensions explained in more detail in section 3.2.3 allows a comprehensive analysis and thus a comparison of the effects of family and lone founder firms, although structural differences may exist.

## 2.3. Agency theory and innovation input

Agency theory focuses on conflicts of interest between owners and managers of public firms (Fama & Jensen, 1983, p. 301ff.). In this respect, from an agency's point of view, family and lone founder firms differ from other firms (Chrisman et al., 2004, p. 348f.; Sirmon & Hitt, 2003, p. 343).

Since family firms pursue both, economic and non-economic goals, actions can be considered as agency problems in non-family firms, whereas this may not be the case for family led companies (Chrisman et al., 2004, p. 348). Families are trying to reinforce the status quo, and therefore their primary interest is not only economic efficiency but also to maintain own, family-specific interests (Chua, Chrisman, & Steier, 2003, p. 334f.).[5] Pursuing these family-specific and non-economic goals in family firms is even present when they incur a greater performance hazard (Gómez-Mejía et al., 2007, p. 107), often leading to potential owner-owner conflicts or to family-specific agency costs like free riding of individual family members (Lubatkin, Schulze, Ling, & Dino, 2005, p. 324). In addition, families are afraid of losing control of their business and therefore avoid involving non-family investors and limiting funds to firm-generated resources and financing opportunities of financial institutions (Sirmon & Hitt, 2003, p. 339). As typically undiversified shareholders, families often avoid high-risk investments (Naldi, Nordqvist, Sjöberg, & Wiklund, 2007, p. 39), and in general families do not want to hand over control to new, outside partners (Matzler et al., 2014, p. 321).

In contrast, lone founder firms differ structurally from family firms: founders are involved in their business from the very beginning and have therefore developed an extensive understanding of the underlying processes (Block, 2012, p. 252). They have a proven track record of entrepreneurship and success in building and growing their own business (Miller et al., 2011, p. 8), and therefore show an openness towards uncertain and high-risk innovation projects (Block et al., 2013, p. 181). Since shareholdings are typically in the majority of founders and the firm is not owned by dispersed shareholders, free-rider problems do not occur with lone founder firms (Maug, 1998, p. 67).

The underlying study focuses on the fine-grained differences between the innovation activities of family and lone founder firms. To address the burning question of this study,

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[3]Therefore, firms are treated as family firms if both, the founder and relatives of the founder are active in the firm as owners, managers or as supervisors.

[4]The detailed analysis of the three influence dimensions is in line with previous studies (cf. Anderson & Reeb, 2004, p. 210; Klein, 2000, p. 158f.; Matzler et al., 2014, p. 325).

[5]For example, familiness, defined as the unique bundle of resources created by the interaction between family and business (Habbershon & Williams, 1999, p. 11) often takes precedence over other goals (Sirmon & Hitt, 2003, p. 341).

the following section provides hypotheses on the influence of families and lone founders on innovation input.

### 2.3.1. Effect of family influence on innovation input (R&D intensity)

Agency theory suggests that loss-averse families protect their family wealth and even sacrifice economic performance to do so (Chrisman & Patel, 2012, p. 981). When this is the case and family goals take precedence over long-term economic firm goals, families prefer sure gains over risky investment opportunities (Chrisman & Patel, 2012, p. 981f.). These family specific agency costs could lead to a "creative self-destruction" as families protect the cash flow of their business and restrain innovation activities (Morck & Yeung, 2003, p. 377ff.). Often, families exhibit myopic behavior such as taking perquisites and privileges, which is beneficial for them but at the expense of outside shareholders (Schulze, Lubatkin, Dino, & Buchholtz, 2001, p. 102f.). Especially when considering the ownership influence dimension, recent studies find consistent negative effects of family ownership on R&D investments: for example, Chen and Hsu (2009, p. 358) find a significant negative effect of family ownership on R&D intensity for Taiwanese firms from the electronic industry. In accordance with Chen and Hsu (2009, p. 347ff.), Munari, Oriani, and Sobrero (2010, p. 1102) show similar results for Western European firms. In addition to Asian and European countries, empirical evidence from America show consistent effects, so that a negative family ownership effect on R&D intensity can be found for S&P 500 (and S&P 1500) firms (cf. Block, 2012, p. 256; Chrisman & Patel, 2012, p. 987).[6]

Next to the loss-aversion argument, families want to maintain the independence and control in their businesses and are therefore willing to accept an increased performance hazard (Gómez-Mejía et al., 2007, p. 117). In other words, family owners and managers give priority to maintaining discretion over improved performance (Kotlar et al., 2013, p. 1078). In order to prevent losses in family-specific goals, family managers are even willing to accept, next to financial losses, hazards to the firm's innovation performance (Kotlar et al., 2013, p. 1078). If families maintain control in their businesses, they might therefore decide against important criteria for most outside shareholders (Matzler et al., 2014, p. 321). This is consistent with the study of Villalonga and Amit (2006, p. 388), as they found worse owner-manager conflicts for family firms where a descendant of the founder serves as the chief executive officer (CEO), compared to non-family firms. There is also empirical evidence for the management influence dimension which suggests a negative effect on R&D intensity: Matzler et al. (2014, p. 328), for example, find a significant negative effect for their family management variable on R&D intensity for German listed

companies. Furthermore, Kotlar et al. (2013, p. 1082) determine a negative and significant effect of family management on technology acquisition for Spanish manufacturing firms.

In addition to owners and managers, people in the supervisory organism of a firm have a substantial influence on how resources are allocated (Anderson & Reeb, 2004, p. 213f.). Independent supervisory boards of firms play an important role in mitigating diverging interests between different shareholders (Anderson & Reeb, 2004, p. 231) and building bridges between the firm owners and managers (Klein, 2000, p. 168).[7] As mentioned above, this is particularly important for family firms, as families might pursue goals other than purely economic ones (Chua et al., 2003, p. 334f.). Thus, if families are the dominant players in the supervisory board, the independence assumption is violated, as families might pursue other interests than independent members of the supervisory board (Matzler et al., 2014, p. 322). Anderson and Reeb (2003, p. 664) argue that family firms have fewer outside observers in their supervisory board and therefore there is extensive family control. This argument is in line with Anderson and Reeb (2004, p. 215), who find that an excess amount of family members within the supervisory board increases the family's likelihood of wealth expropriation. Also, Kor (2006, p. 1089) argues that independent supervisory boards are positively related to R&D intensity, even after controlling for TMT effects like the size or the average age of the TMT. Since the independence condition is violated for family firms, a negative effect of family governance on R&D intensity is assumed (Matzler et al., 2014, p. 322). This assumption was confirmed by the study of Matzler et al. (2014, p. 328) as they found a significant negative effect of family governance on R&D intensity.

Based on these arguments, the following hypothesis is proposed:

> *Hypothesis 1: Family influence has a negative effect on innovation input (R&D intensity).*

### 2.3.2. Effect of founder influence on innovation input (R&D intensity)

If owners and managers of a firm are separated into different groups, agency problems often exist in terms of R&D investments as different risk preferences are present in these two groups (Anderson et al., 2012, p. 1746). On the one hand, owners are interested in long term profits, while managers often shy away from uncertain and long-term R&D payoffs as they favor short-term profits, want to establish good reputation in the managers' job market and promote job security (Block, 2012, p. 252). In case of lone founder firms, these agency problems are likely to be mitigated: typically, high ownership shares and high investments in the firm lead to a strong incentive for founders to exercise good monitoring (Block, 2012, p. 252). Therefore, the free-rider problem,

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[6]In the Chrisman and Patel (2012, p. 983) study, the S&P 1500, which comprises the S&P 500, the S&P 400 Mid Cap and the S&P 600 Small Cap Index, served as the index for their analysis.

[7]Supervisory boards are seen as a powerful monitor mechanism of the top management team (TMT) if there is a clear separation of top executives and supervisory boards (Kor, 2006, p. 1085).

present in firms with predominantly dispersed shareholders, does usually not exist for lone founder firms as the centralized shareholdings lead to monitoring benefits and incentives for the founder (Maug, 1998, p. 67). As found by Anderson and Reeb (2003, p. 679), these lower agency costs lead to higher firm valuations for lone founder firms and thus might also positively affect R&D intensity. This finding is consistent with Block (2012, p. 256) who identifies a significant positive effect for lone founder owned firms on R&D intensity in his empirical study of R&D intensive S&P 500 firms.

In addition to the mitigation of free-rider problems in lone founder firms, firm managers may be reluctant to invest in R&D projects as they bear employment risks for poor R&D investment choices (Kor, 2006, p. 1085). This reluctance to invest in R&D projects is inconsistent with the shareholders point of view, as their typically diversified portfolio allows them a higher exposure to risky projects (Kor, 2006, p. 1085). The opposite should be argued for lone founder firms: their willingness to invest in riskier and more uncertain innovation projects (Block et al., 2013, p. 181), as well as their high contribution to long-term firm profits (Block, 2012, p. 262) should result in a higher R&D intensity. R&D investments with uncertain long-term payoffs are not weighted heavily by lone founders, because they are interested in the long-term profitability of their firm and therefore accept potential short-term losses (Block, 2012, p. 262). Founders in the TMT therefore avoid many owner-manager principal-agent costs, which could otherwise divert resources from innovation efforts (cf. Kor, 2006, p. 1094). Consequently, the principal-agent problem is assumed to be outbalanced, so that a positive effect of founder management on R&D intensity is expected. This is in line with Kor (2006, p. 1093): in her empirical study of firms in the medical and surgical instruments industry, she finds that managers' tenure is negatively correlated with R&D investment intensity by drawing on the upper-echelons theory.[8] In other words, the presence of founders in the firms TMT is associated with higher R&D expenditures (Kor, 2006, p. 1093).

Finally, the governance influence dimension also affects R&D investment decisions for lone founder firms. The extraordinary commitment of founders in the governance system of a firm may lead to decreasing agency costs or, put differently, to "anti-agency costs" (Fama & Jensen, 1983, p. 322; Nelson, 2003, p. 710). As found by Nelson (2003, p. 722), lone founder firms in the U.S. seem to have more independent governance boards than other firms because founder CEOs are less likely to simultaneously serve in the board of supervisors (the so-called CEO duality). This independence leads to fewer shareholder-value destroying decisions as the board can effectively perform its monitoring task (Chen & Hsu, 2009, p. 351). Therefore, lone founders in the supervi-

sory board can act as effective monitors, since they are familiar with their business and the underlying processes as well as invested heavily in the firm (Block, 2012, p. 252). With monitoring efforts, lone founder firms do not face coordination problems comparable to those of family firms (Block, 2012, p. 253), since in family firms rivalries between siblings, different goals of different family members or identity conflicts may be present (Dyer, 1994, p. 118; Eddleston & Kellermanns, 2007, p. 547; Schulze et al., 2001, p. 102f.; Schulze, Lubatkin, & Dino, 2003, p. 184f.). Consequently, family firms are described in literature as businesses with several potential fields of conflict (Harvey & Evans, 1994, p. 331), which in turn should not be present for lone founder firms. Therefore, next to founder ownership and management, a positive effect for founder governance on R&D intensity is assumed. Consequently, the following hypothesis is stated:

*Hypothesis 2: Founder influence has a positive effect on innovation input (R&D intensity).*

### 2.4. Resource-based view of the firm and innovation output

While innovation input is a primarily matter of strategic decisions (Sirmon & Hitt, 2003, p. 352f.), innovation output is also determined by different strategic activities, processes, and capabilities (Matzler et al., 2014, p. 322). When drawing on the resource-based view of the firm, unique family and founder resources are likely to have an impact on innovation output (Llach & Nordqvist, 2010, p. 394), as managing resources is crucial for maintaining competitive advantages in uncertain market environments (Sirmon & Hitt, 2003, p. 352).

Competitive advantages therefore derive from unique resources and capabilities which firms control and which make them better compared to their competitors (Cabrera-Suárez et al., 2001, p. 38). For family firms, these unique resources, also known as familiness, result from the interaction of family involvement and the family firms' system (Cabrera-Suárez et al., 2001, p. 38). With regard to innovation output, the underlying governance structure of family firms particularly accounts for family-related advantages and disadvantages (Carney, 2005, p. 249ff.). As argued by Zahra (2005, p. 23), family firms' long-term horizon enables them to maintain lasting relationships with internal and external stakeholders. In addition to tight relationships with key stakeholders, family firms have more flexible decision-making structures and use less formal monitoring mechanisms, resulting in a more efficient translation of their resources in innovation output (Craig & Dibrell, 2006, p. 278). Also, advantages in human and relational capital in family firms should lead to unique benefits with respect to innovation output (Cabrera-Suárez et al., 2001, p. 38).

To reach a considerable size in R&D intensive industries, firms need to invest heavily in innovation efforts (Block et al., 2013, p. 184). Since founders build up their business from the beginning and have typically overseen innovation processes within the firm, lone founder firms are likely to generate significant innovation outcome (Block et al., 2013,

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[8]According to the upper-echelons theory, firms actions are reflections of their top managers (Hambrick & Mason, 1984, p. 193ff.). Thereby, different observable and psychological characteristics of managers lead to different management decisions and strategic choices (Hambrick & Mason, 1984, p. 198).

p. 184). With their alertness, optimism, creativity, and their prior knowledge, they bring distinct resources and characteristics into the firm (Ardichvili, Cardozo, & Ray, 2003, p. 116; Langlois, 2007, p. 1120f.), which are likely to shape firms' innovation behavior. This entrepreneurial perspective of founders enables them to lead their firm through uncertain and challenging environments (Kroll & Walters, 2007, p. 1199). Since entrepreneurial firms do not draw on existing knowledge or capabilities, they are sources of novelty and innovation (Langlois, 2007, p. 1120).

Since both, family and lone founder firms are likely to have distinct resources affecting innovation output, the purpose of the following section is to provide hypotheses for the effect of family and lone founder influence on innovation output.

### 2.4.1. Effect of family influence on innovation output (granted patents)

High investment levels in the firm by family owners make them more cautious and conservative in their strategic decisions, leading to potentially lower R&D investments (Anderson et al., 2012, p. 1746; Miller & Le Breton-Miller, 2006, p. 81). In contrast, however, these contributions create a strong incentive to ensure the long-term viability of the company, which in turn depends on successful innovation (Anderson et al., 2012, p. 1746). Since families typically have high ownership stakes, they are effective monitors in place: they can intervene against short-sighted management behavior and influence important investment decisions (Anderson et al., 2012, p. 1747). Regarding resources, family ownership can promote unique forms of human and social capital (Chen & Hsu, 2009, p. 349). Family firms are often passed over to descendants, thereby creating a loyal and skilled set of personnel and long-term external relationships that facilitate this process (Miller & Le Breton-Miller, 2006, p. 82). By investing time and money in sustaining associations, they foster long-term relationships with resource providers such as financial institutions, customers, or suppliers (Miller & Le Breton-Miller, 2005, p. 6; Miller & Le Breton-Miller, 2006, p. 81f.). In order to strengthen corporate culture, employee commitment and motivation, family firms invest heavily in their employees through employee participation programs, outstanding social benefits and high salaries (Chen & Hsu, 2009, p. 349f.). Family owners further benefit from strong relationships to the TMT and supervisory board resulting in a command unity and in aligned interests (Braun & Sharma, 2007, p. 116). In sum, family ownership resources are likely to increase innovation output.

In addition, family firms may be reluctant to hire outside managers for their TMT (Schulze et al., 2001, p. 104). This reluctance, coupled with difficulties in attracting qualified managers, could result in fewer resources of human capital (Sirmon & Hitt, 2003, p. 342). However, the family managers' extraordinary commitment in the firm (Sirmon & Hitt, 2003, p. 343) and their potentially deep family-specific tacit knowledge that can be transferred across generations (Sirmon & Hitt, 2003, p. 342), is likely to have a positive effect

on the success of family firms. This argument is supported by the study of Llach and Nordqvist (2010, p. 393f.) who find a significantly higher proportion of qualified employees in family firms as well as a higher propensity to devote human capital towards innovation tasks. The relative safety of family managers jobs compared to outside managers allows them to adapt a long-term approach instead of being concerned about short-term results (Matzler et al., 2014, p. 322f.). Also, as shown by Gómez-Mejía et al. (2008, p. 131), family firms are willing to pursue risky and long-term decisions, and there is no difference in risk tolerance compared to non-family firms. These arguments are in line with empirical studies that find positive effects of family management on innovation output: for example, Craig and Dibrell (2006, p. 281) identify a significant positive effect for family managed firms on innovation output in their survey data analysis. Furthermore, as mentioned above, Llach and Nordqvist (2010, p. 394) find a positive relationship between family managed firms and innovation output by drawing on the resource-based view of the firm. Finally, Matzler et al. (2014, p. 328) support these results by taking forward patent citation intensity as a proxy for innovation output.

Supervisory boards provide firms important board capital, consisting of both, human capital such as experience, expertise, and reputation as well as relational capital (network ties to other firms and external contingencies) (Hillman & Dalziel, 2003, p. 383). When making R&D decisions, boards do not only question or advise, but also assist to identify opportunities, needs, and problems in the R&D process (Chen & Hsu, 2009, p. 351). Especially in family firms, the primary function of the supervisory board is to serve and advice rather than to discipline and monitor (Corbetta & Salvato, 2004, p. 123). Thus, boards can also enable innovation even when family board members stress the preservation of socioemotional wealth (Matzler et al., 2014, p. 323). In line with these arguments, Matzler et al. (2014, p. 328) report a significant positive relationship of family governance on their dependent variable patent intensity, defined as firms' patent applications per year scaled by firms' total sales. Thus, in addition to family ownership and management, a positive effect for family governance on innovation output is assumed.

Based on the arguments stated above, the following is hypothesized:

> *Hypothesis 3: Family influence has a positive effect on innovation output (granted patents).*

### 2.4.2. Effect of founder influence on innovation output (granted patents)

Owning founders, building up large entrepreneurial firms through an innovation-oriented approach, are unlikely to abandon this strategy (Block et al., 2013, p. 184). Hereby, founders have unique characteristics that set them apart from other individuals – earlier studies demonstrate that they have a sense that they can take their fate into their own hands (Boone, Brabander, & Witteloostuijn, 1996, p. 668), and they show a high need of performance (McCelland, 1961, p.

205ff.). They see themselves as an entrepreneur and thus as individuals with risk-taking preferences who value growth and innovation (Block, 2012, p. 249). Founder's charismatic authority described by Langlois (2007, p. 1121) is one way of reducing dynamic transaction costs by packaging complex knowledge and information in a form that others can absorb cheaply. As argued by Block et al. (2013, p. 184), the identification of founders belonging to the social entrepreneur group may foster their efforts towards taking significant innovation projects that lead to growth for the firm. Hereby, the founders' focus is not on R&D investment but on the outcome of innovation (e.g. granted patents), which underpin the credibility of growing firms seeking to raise capital (de Rassenfosse, 2012, p. 439). Therefore, a positive effect for founder ownership on innovation output is assumed.

In addition to the ownership dimension, founder management is likely to have an impact on innovation output. Active founders are the longest tenured members within the firm, which may lead to a strengthening of the dominant firm logic, or collective mentality (Nelson, 2003, p. 711). They are highly committed to their firms, build extensive knowledge and experience and therefore actively shape the firms' future with their unique resource endowment at an early initial public offering (IPO) stage (Nelson, 2003, p. 714f.). In line with this argument, Kroll and Walters (2007, p. 1211) find a positive relationship between incumbent founder managers and firm performance. They argue, that incumbent founder managers are able to maintain the entrepreneurial perception in the firm in order to run their firms in uncertain times after the IPO stage (Kroll & Walters, 2007, p. 1199). Thus, the energy, the motivation, the experience, and the expertise of founders flow into the daily innovation endeavors (Block et al., 2013, p. 185). Empirical evidence, supporting the above arguments, is provided by Block et al. (2013, p. 187), who find a significant positive effect for founders in management positions on innovation output proxied by patent citations for S&P 500 firms.

Firms board of directors provides access to human and financial capabilities and resources that enable a firm to become more capable and willing to engage in innovative practices (Matzler et al., 2014, p. 322). Founders act as entrepreneurs with special business or technical knowledge and a foundation for growth and innovation (McConaughy & Phillips, 1999, p. 130). To maintain this entrepreneurial foundation, founders may educate next generation managers on how to innovate and exploit growth opportunities profitably (McConaughy & Phillips, 1999, p. 130). In this context, founders can play an essential role in influencing the board structure through exerting influence through the board of directors (Anderson & Reeb, 2004, p. 218). As the board of directors of lone founder firms is usually small, there are more efficient decision-making processes as the relationships between the members are easier to manage (cf. Nelson, 2003, p. 710). Since in the case of lone founder firms, boards serve more as a consulting mechanism rather than a pure monitoring mechanism (Chen & Hsu, 2009, p. 351), founders can use their unique knowledge to advise the

board of directors in order to preserve the sources of novelty and innovation in the firm (Langlois, 2007, p. 1120). Thus, not only for founder ownership and management, but also for founder governance a positive effect on innovation output is assumed.

Accordingly, the following hypothesis is proposed:

*Hypothesis 4: Founder influence has a positive effect on innovation output (granted patents).*

## 3. Data and sample

### 3.1. The setting: the German CDAX

The burning question of the underlying study is to investigate the impact of family and founder ownership, management, and governance on firms' innovation performance. More precisely, the study aims to investigate innovation input and innovation output separately in order to obtain a comprehensive understanding of family and founder influence on firms' innovativeness. To address this burning question, the sample was selected according to a stock index, which is consistent with many previous studies (cf. Anderson & Reeb, 2003, p. 660; Block, 2012, p. 253; Chen & Hsu, 2009, p. 352). Thereby, the empirical analysis focuses on German firms listed in the CDAX from 2013 through 2017. The CDAX is an index which is established by the *Deutsche Börse AG* and comprises all German firms in the Prime Standard and the General Standard. Thus, the CDAX presents the entire breadth of the German stock market by serving as a meaningful benchmark for economic growth and performance of the entire German stock market (Deutsche Börse, 2020, n.p.). As the CDAX contains a mixture of founder, family, and other firms, it is the ideal index to address the purpose of the underlying study (Matzler et al., 2014, p. 324).

The German context is well suited for this study, as the purpose of the empirical analysis is to make a clear distinction between the three different influence dimensions of families and founders on firms' innovation performance – ownership, management, and governance. Regarding management and supervision of a firm, Germany's system is two-tiered and therefore clearly distinguishes between these two influence dimensions (Klein, 2000, p. 167): this mutual exclusivity reduces distortions in the interpretation of the independent variables in the analysis part in section 4 and 5 and allows for a comprehensive interpretation of the family and founder effects on innovation input and innovation output.

By focusing only on German firms in the analysis, the study also automatically controls for cross-country institutional differences which may influence the innovation behavior of firms (Acemoglu, Johnson, & Robinson, 2005, p. 389).

### 3.2. Data and variables

The underlying study includes an empirical data analysis performed by the statistic software STATA to answer the burning question. Therefore, the following section provides an overview of the sample and data sources, the dependent, independent, and control variables used.

### 3.2.1. Data and sample

In order to obtain financial data for the sample firms for the years 2013 through 2017 (5-year panel data structure, with each firm representing a separate panel), the starting point for data acquisition was the AMADEUS database of the Bureau van Dijk (Siedschlag, Smith, Turcu, & Zhang, 2013, p. 1424).[9] Financial data was collected through the Wharton Research Data Service website provided by the Data room of the Goethe-University in Frankfurt/Main. In order to ensure comparability to previous studies, standard industrial classification (SIC) codes are used to clean the dataset with financial enterprises (SIC codes 600 through 616, 650 through 653, and 671 through 679), public utilities (SIC codes 480 through 494), and foreign companies as they have different accounting standards and government regulation (Anderson et al., 2012, p. 1747). The structure of these companies potentially affects the investment choice of the firms and the structure of equity ownership and therefore it would not be appropriate to compare these particular types of firms with the rest of the sample (Anderson et al., 2012, p. 1747; Block, 2012, p. 253). A special issue when dealing with R&D data is that several databases have missing datapoints for firms' R&D expenditures (Anderson et al., 2012, p. 1751). With regard to the sample firms, the AMADEUS database already includes R&D expenditure data for firms, but datapoints were missing for around 65% of the sample. However, in order to still obtain a large sample of firms, missing data on R&D expenditures were manually collected through the yearly financial statements and annual reports of the sample firms (Czarnitzki & Kraft, 2009, p. 376).

Data on firm's ownership, management, and governance, on the other hand, were obtained manually from firm websites and annual reports as well as through the Hoppenstedt database of the University of Mannheim (Hoppenstedt Aktienführer yearbook) (Klein, 2000, p. 159). Here, the Hoppenstedt database provides comprehensive information on ownership, management, and governance and allows the identification of founders and family members of the sample firms (Matzler et al., 2014, p. 324).

Finally, the existing data set was matched with patent count data of the PATSTAT database provided by the European Patent Office (EPO), which provides data for granted patents for the years 2013 through 2017.[10] The PATSTAT database provides comprehensive information on patents for countries around the world, thus enabling a comprehensive analysis of the patent information provided (Block et al., 2013, p. 185).

During the various steps of data acquisition, firms for which reliable data did not exist were excluded from the final dataset (Matzler et al., 2014, p. 324). Also, the data set was cross-checked to exclude firms with implausible data

(Matzler et al., 2014, p. 324). In total, this resulted in an unbalanced panel data set of 165 firms and in an maximum of 804 firm-year observations for both, the empirical innovation input as well as innovation output analysis.

### 3.2.2. Dependent variables

In order to adequately address the burning question of this study, two empirical analyses – an innovation input and an innovation output regression analysis – are conducted. Therefore, the study deals with two dependent variables, which are described in the following section.

For the innovation input regression, R&D intensity serves as dependent variable, defined as R&D expenditures over total sales of the respective firm. R&D intensity is a widely accepted variable for innovation input that has been used in many previous studies (cf. Chen & Hsu, 2009, p. 353; Chrisman & Patel, 2012, p. 983; Matzler et al., 2014, p. 324). R&D intensity is preferred over R&D expenditures as dependent variable, since scaling R&D expenditures by total sales controls for heteroskedasticity and size effects as well as allows for a relative comparison between firms (Chen & Hsu, 2009, p. 353). The ratio used in the underlying study also factors out the inflation effect and is therefore preferred over other R&D intensity measures like R&D expenditures scaled by the number of employees (G. S. Hansen & Hill, 1991, p. 4). It thus better reflects the firm's innovation effort and serves as a suitable indicator for measuring innovation input (Chen & Hsu, 2009, p. 353). Following Matzler et al. (2014, p. 324), the natural logarithm of R&D intensity is used for the empirical analysis to reduce the skewness of the variable and to simplify the interpretation of the coefficients in the regression analysis. The ratio of R&D intensity is considered to be well suited to test assumptions derived from the agency theory, since the ratio is an indication for the firm's long term economic orientation (Chrisman & Patel, 2012, p. 983). As discussed in sections 2.3.1 and 2.3.2, hypotheses were developed by drawing on the agency theory in such a way that the ratio serves as the ideal proxy for innovation input in the underlying study.

In the second part of this study, (intermediate) innovation output is captured by patent counts, which is in line with many previous studies (cf. Block et al., 2013, p. 186; Czarnitzki & Kraft, 2009, p. 377; Duran et al., 2016, p. 1235). In the empirical analysis, patent count is defined as the filed number of granted patents of a firm within a certain year (Duran et al., 2016, p. 1235). The number of granted patents is preferred over the number of patents applied for by a firm, as the latter has some disadvantages: for example, some knowledge firms apply for will never be implemented (Czarnitzki & Kraft, 2009, p. 377). Although the innovation output measure in this study does not take into account the quality of the granted patents (as for example patent forward citations do), it controls for the gap between applied and granted patents and appropriately reflects the commercial value of the knowledge for the underlying study (Block et al., 2013, p. 181).

Both dependent variables used in the underlying study

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[9]The AMADEUS database comprises comprehensive firm-level data on over 18 million firms in 43 European countries (Siedschlag et al., 2013, p. 1421).

[10]A query used to retrieve patent data for the filed number of applied and granted patents from PATSTAT is shown in Appendix 1.

are widely accepted indicators for measuring firm's innovation activity (Czarnitzki & Kraft, 2009, p. 377).

### 3.2.3. Independent variables

There exists no universal definition of the term family firm in the literature (López-Gracia & Sánchez-Andújar, 2007, p. 275). Like in previous studies, the underlying empirical analysis distinguishes between lone founder firms and family firms (cf. Anderson et al., 2012, p. 1747; Block, 2012, p. 255). Thereby, a lone founder firm is a special form of a family firm in which only the respective founder (founder team) holds an influential position in the firm and no relatives of the founder are involved as owners, managers, or in the firms board of supervisors (Anderson et al., 2012, p. 1747). Family or founder influence can be explained through the capital holders of the firm (Donckels & Lambrecht, 1999, p. 186), by the people who manage the firms activities (Filbeck & Lee, 2000, p. 212f.), as well as by the people monitoring the firm (Anderson & Reeb, 2003, p. 664). In order to take all three influence dimensions into account, family and lone founder firms are not only defined by a dichotomous dummy variable in the underlying study (Matzler et al., 2014, p. 325). Instead, a distinction is made between three different influence dimensions: ownership, management, and governance, as families or founders can exert influence over each of these dimensions (López-Gracia & Sánchez-Andújar, 2007, p. 275f.). Furthermore, there is empirical evidence that German CEOs have less influence on firm's performance and have less discretion compared to other countries such as the USA (Crossland & Hambrick, 2007, p. 785). Therefore, it would not be appropriate to use the mere presence of a founder or a family member, as CEO for the basis for the categorization of a lone founder firm or a family business, respectively. Consequently, following Klein (2000, p. 158ff.) and Matzler et al. (2014, p. 325), family firms (lone founder firms) are defined in the three dimensions of the Substantial Family Influence scale:

1. *Ownership:* shares held by family members (founders) in relation to the total outstanding shares
2. *Management:* number of family members (founders) active in the TMT in relation to the total members in the TMT (percentage of seats in the firm's TMT)
3. *Governance:* number of family members (founders) active in the supervisory board in relation to the total members in the supervisory board (percentage of seats in the firm's supervisory board)[11]

Therefore, this underlying study defines family and lone founder firms in a modular way to make the definition more

transparent (Klein, 2000, p. 158).[12] Following Block et al. (2013, p. 186), family and lone founder firms are mutually exclusive in the underlying study, meaning that a family firm cannot be a lone founder firm and vice versa. A lone founder firm therefore only exists if the founder holds shares or is present in the management or the supervisory board where simultaneously no relatives of the founder are active as shareholders, managers, or supervisors of the firm (Block, 2012, p. 253). In the case that a founder and relatives of a founder are in an influential position in the firm, the firm is treated as a family firm in the empirical analysis (Block, 2012, p. 253). The base category for both, family and lone founder firms is a nonfamily firm and thus a firm in which neither a founder nor a relative of a founder is present in an influential position (Block, 2012, p. 253f.). Consequently, all three dimensions report the value 0 in this case. In short, the underlying study deals with three types of firms: lone founder firms, family firms, and other firms.

### 3.2.4. Control variables

Several variables are included in the empirical analyses in order to control for factors that potentially have an effect on a firm's investment decision as well as on the respective innovation input and innovation output (Anderson et al., 2012, p. 1748). In line with many previous studies, it is controlled for the size of a firm by taking a firm's total sales into account (cf. Chrisman & Patel, 2012, p. 985; Matzler et al., 2014, p. 325). The reason for the control variable size is, that the innovation process has interrelationships between innovation input and innovation output and there may be differences in investment activity due to firm size (Anderson et al., 2012, p. 1748).[13] In addition to size it is also controlled for the age of a firm – defined by the years since the firm's incorporation (Zahra, 2005, p. 32) – in order to take into account potential entrenchment in family and founder firms (Chrisman & Patel, 2012, p. 985). Anderson et al. (2012, p. 1748) also point out that it is important to control for age, because of different investment alternatives during the firm's life cycle. Since both, total sales and firm age, are highly skewed, log-transformations (natural logarithm) are applied (Block et al., 2013, p. 188; Chen & Hsu, 2009, p. 354; Chrisman & Patel, 2012, p. 985). In addition to size and age, the firm's return of assets is included as well, as the firm's past performance could influence R&D spending (Barker & Mueller, 2002, p. 791). Furthermore, firm leverage – defined as the firm's total debt over total assets

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[11]A common problem with a sample of German firms might be, that some firms have no supervisory board implemented (Klein, 2000, p. 167). However, this problem is not an issue in the underlying study since all firms in the data set have a supervisory board.

[12]Each module of the definition (ownership, management, and governance) is a continuous measure, ranging from 0 to 1 (Matzler et al., 2014, p. 325). Therefore, structural differences between the respective firms do not play a role in the underlying study: for example, the relative measure of the management variable controls for the size of the TMT and allows for a comparison between firms. Also, through the relative definition, the variables control for founders' (descendants') presence in the TMT and their influence relative to the size of the TMT (Kor, 2003, p. 712).

[13]Note that there are also other possibilities of controlling for size effects, such as taking the firms number of employees or total assets into account (cf. Lee & O'Neill, 2003, p. 217; Zahra, 2005, p. 32).

(Lee & O'Neill, 2003, p. 217; Maury, 2006, p. 326) – is included, as the firm's debt levels could influence the investment choice of firms (Barker & Mueller, 2002, p. 791). As suggested by Chen and Hsu (2009, p. 353), a log transformation (log(leverage/(1-leverage)) is used to correct for skewness. As the funds which are currently available are likely to influence R&D decisions (Baysinger & Hoskisson, 1989, p. 319), a measure of liquidity is inserted. Thereby, cash flow divided by total sales serves as a proxy for the firm's liquidity state in each period (Block, 2012, p. 255). Since also the investment propensity of a firm is likely to influence R&D decisions, capital intensity – defined as fixed assets divided by the number of employees – is included in the analyses (Chrisman & Patel, 2012, p. 985; Matzler et al., 2014, p. 325). To complete firm-level controls, intangible asset intensity is used to take already available innovation capital (such as existing patents, trademarks, or bookplates) into account (Matzler et al., 2014, p. 325). In this underlying study, intangible asset intensity is defined as the stock of intangible fixed assets in relation to a firm's total assets (Matzler et al., 2014, p. 325). Firm-level data was obtained from the AMADEUS database of the Bureau van Dijk accessed through the data room of the Goethe-University Frankfurt/Main as well as from the Hoppenstedt Database (Hoppenstedt Aktienführer yearbook) provided by the University of Mannheim.

Next to firm-level controls, time dummies are included to account for time-specific factors and macroeconomic shocks influencing firms R&D intensity (Matzler et al., 2014, p. 325).[14] Finally, in order to take into account industry-specific effects that could influence R&D choices, industry dummies are included using three-digit SIC codes (Chrisman & Patel, 2012, p. 985; Lee & O'Neill, 2003, p. 217).[15,16]

Table 1 provides a summary of the variables definitions used in the underlying study.

### 3.3. Methods

In a first step, the R&D intensity regression is the focus of the underlying study. To answer the burning question, whether family and lone founder firms differ in their R&D intensity from other firms, both, fixed as well as random effects panel regression models are estimated (Block, 2012, p. 256).

Since data is available for the same firms over several years, panel regression models are chosen to control for unobserved individual heterogeneity and thus mitigate the risk of obtaining biased results (Batalgi, 2012, p. 6; Wooldridge, 2015, p. 403). For interpretation purposes, the random effects model will be used, since the research question primarily deals with cross-sectional results (Block, 2012, p. 256), and has the advantage of allowing for time constant explanatory variables (Wooldridge, 2015, p. 442). Therefore, the following regression equation for R&D intensity is used to test Hypothesis 1 and Hypothesis 2:

$$\log(R\&D\,intensity)_{it}$$
$$= \beta_0 + \beta_1 ownership_{it-1} + \beta_2 management_{it-1} \quad (1)$$
$$+ \beta_3 governance_{it-1} + \boldsymbol{\beta_4} controls_{it-1}$$

Note that the ownership, management as well as governance variables are coded for family and lone founder firms separately with the base category of other firms. To obtain heteroscedastic and autocorrelation robust estimations, the command -xtreg, robust- was performed in STATA, since the dependent variable is likely to be auto-correlated within a panel (Matzler et al., 2014, p. 326).[17,18,19] Since both models are estimated with heteroscedastic and autocorrelation robust standard errors, a Hausman (1978, p. 1251ff.) test cannot be used as an indicator for model selection for a fixed or a random effects model. Therefore, results are presented for both, fixed and random panel regression models.[20]

For the second step, granted patents serve as the dependent variable. Since granted patents are (non-negative) integer data, the appropriate model choice is a Poisson model or a negative binomial model, depending on the (over)dispersion of the dependent variable (Block et al., 2013, p. 187).[21] The main assumption for using a Poisson model is that the mean of the dependent variable is equal to the variance (so that

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[14]Although a joint significance test for time fixed effects through the testparm command in STATA shows no significant result, the underlying study includes time fixed effects in the empirical analysis to be consistent with previous literature (cf. Block, 2012, p. 258; Chen & Hsu, 2009, p. 357; Chrisman & Patel, 2012, p. 985). Also note that when removing the lag between the dependent and the independent and control variables, the year fixed effects become significant and therefore justify an inclusion in the model.

[15]Industry fixed effects are only included in the random effects regression model (and not in the fixed effects regression model) because of their low variation across years Block et al., 2013, p. 187. As they do not provide any additional explanatory power in the fixed effects specification, they would be automatically dropped out by STATA.

[16]The testparm command for joint significance indicates that industry dummies are highly significantly different from zero (p<0.000 for the hypothesis that all industry dummies are equal to zero) and therefore industry dummies are included in the random effects estimation models (cf. Block, 2012, p. 258; Block et al., 2013, p. 188).

[17]Autocorrelation is assumed to be present between panels, because each firm is considered a panel in the underlying study and the autocorrelation coefficient is likely to differ across panels (Matzler et al., 2014, p. 326).

[18]Note that the robust specification in STATA is technically the same as to cluster standard errors at the entity level (cluster(id) specification) for the xtreg command.

[19]Also note that heteroscedasticity and autocorrelation robust standard errors are used in the R&D intensity models, since the null hypothesis that homoscedasticity (or constant variances) are present can be rejected at any conventional significance level (p<0.000) (Wooldridge, 2015, p. 250f.). In addition, a Lagrange-Multiplier test for serial autocorrelation (command xtserial) was executed and the null hypotheses that no serial correlation exists is rejected (p<0.01) (Batalgi, 2012, p. 93ff.). Therefore, heteroscedasticity and autocorrelation robust standard errors are taken into account in the empirical specification.

[20]Note that the Breusch-Pagan Lagrange multiplier test indicates that a random effects regression model should be preferred over a simple Ordinary Least Squares, since the null hypotheses that the variance across entities is zero (i.e. no panel effects) is rejected at any conventional significance level (p<0.000) (Wooldridge, 2015, p. 251).

[21]Poisson or negative binomial regression models are generally preferred over ordinary linear regressions because the former models have the advantage of being more precisely tailored to the distribution of the dependent count variable (Allison, 2012, p. 265).

**Table 1:** Summary of variable definition.

| Variable name | Definition |
|---|---|
| Log(R&D intensity) | Natural logarithm of a firm's R&D expenditures over total sales |
| Patents granted | Filed number of granted patents per year (count data) |
| Ownership founder | Shares hold by the founder (founder team) over total shares outstanding |
| Management founder | Number of founders in the TMT over total number of members in the TMT |
| Governance founder | Number of founders in the supervisory board over total number of members in the supervisory board |
| Ownership family | Shares hold by relatives of the founder over total shares outstanding |
| Management family | Number of relatives of the founders in the TMT over total number of members in the TMT |
| Governance family | Number of relatives of the founders in the supervisory board over total number of members in the supervisory board |
| Return on assets | Earnings before interest and taxes (EBIT) over a firm's total assets |
| Log(sales) | Natural logarithm of a firm's total sales |
| Log(firm age) | Natural logarithm of firm age defined as the number of years the firm exists since incorporation |
| Log(capital intensity) | Natural logarithm of a firm's capital intensity defined as a firm's fixed assets over the total number of employees |
| Log(leverage) | Natural logarithm transformation of a firm's leverage defined as total debt over total assets |
| Cash flow/sales | A Firm's cash flow over total sales |
| Log(intangible asset intensity) | Natural logarithm of a firm's stock of intangible fixed assets over total assets |
| Year dummies | Five dummy variables accounting for the years 2013 through 2017 |
| Industry dummies | Seven dummy variables indicating observations in a certain industry (defined through three-digit SIC codes) |

Source: own presentation.

there is no overdispersion of the data) (Wooldridge, 2015, p. 545). As the Standard Deviation of the variable granted patents is around 3.43 times larger than the mean, the dependent variable is clearly overdispersed (cf. Block et al., 2013, p. 187). When comparing the mean with the variance the overdispersion becomes even more present – the variance is around 929 times larger than the mean. Since the dispersion of the unconditional mean is only a first indication that the negative binomial regression model should be used for the data, the likelihood ratio chi-square test was carried out through the *lrtest* command (Wooldridge, 2015, p. 529). With regard to the Akaike and the Bayesian information criteria, the model choice according to the likelihood ratio chi-squared test is consistent with the unconditional mean overdispersion, as both methods favor the negative binomial estimation. Therefore, the main assumption for using the Poisson model is violated, and a negative binomial regression model is preferred (Block et al., 2013, p. 187). Zero truncation issues do not occur in the data set since the patent count data were obtained directly from the PATSTAT database and the coded zeros were not due to missing data but due to missing patent activity in the respective year (Block et al., 2013, p. 187). Although around 46% firm-year observations in the data set report a zero in the dependent variable, the negative

binomial regression is preferred to the zero-inflated specification in order to avoid conceptual complexities and since the population does not consist of two groups (Allison, 2012, p. 283). In other words, the coded zeros are not due to a mixture of two data-generating processes. Finally, to account for the panel data structure and to increase the robustness of the results, both, a fixed effects as well as a random effects negative binomial model are estimated. By estimating both, fixed and random effects regression models, the possibility of endogeneity and omitted variable bias is mitigated (Block et al., 2013, p. 187). Therefore, the *xtnbreg* command was executed to estimate negative binomial regressions for panel data.

Following Chen and Hsu (2009, p. 354) and Chrisman and Patel (2012, p. 985), control variables are included lagged at t-1 in both regression analyses. The rationale is that control variables in t-1 jointly determine the context for R&D expenditures in period t (G. S. Hansen & Hill, 1991, p. 4). In addition, a one-year lag between the dependent and independent variables is chosen to avoid potential simultaneity problems and to simplify causal inference (Matzler et al., 2014, p. 326).

## 4. Results

### 4.1. Descriptive statistics

Using the definition for family and lone founder firms described in section 3.2.3, 28.73% of the firm-year observations of the sample are classified as lone founder firms, while 23.38% fall into the category of family firms. Consequently, 47.89% of the firm-year observations report a zero in all three dimensions and are therefore neither classified as a lone founder nor as a family firm. Comparing these numbers with previous studies shows that the proportion of lone founder and family firms is comparable (cf. Anderson et al., 2012, p. 1748; Block, 2012, p. 255; Chrisman & Patel, 2012, p. 986).

Tables 2 and 3 show descriptive statistics of the variables used in the underlying study. Table 2 presents the means, standard deviations as well as minima and maxima of the key variables. As can be seen, the number of observations range from a minimum of 727 firm-year observations to a maximum of 804 firm-year observations. The average R&D intensity is 0.153 and the three dimensions of lone founder and family influence (ownership, management, and governance) are scaled from 0 to 1, as mentioned above. Lone founders therefore own on average 8.33%, while an average family owns 9.63% of their firm's shares. The management founder variable indicates that 8.88% of the TMT is made up of the founders of the company. The same logic applies for the management family, the governance founder, and the governance family variable. On average, there are around 79 granted patents per firm, while the standard deviation accounts for around 271, indicating an overdispersion of the dependent variable in the second part of the study. Interestingly, both dependent variables – R&D intensity and granted patents – have a minimum value of 0, indicating that there are firms in the data set that do not innovate at all. The average return on assets of the sample firms is around 4%, whereas in terms of firm size (measured in total sales), the sample mean is around € 6.9 billion. The average firm is almost 50 years old, with the minimum and maximum firm age being 1 and 269 years, respectively. With regard to capital intensity, there are approximately 291,000 fixed assets per employee. Finally, firms' intangible asset intensity ranges from 0 to 0.84, again indicating that there might be firms that are not innovative at all, as there are firms in the data set that do not have existing innovation capital.

Table 3 presents the Pearson correlation coefficients between the key variables used in the underlying study. As expected, some control variables show significant coefficients, indicating a certain degree of multicollinearity among these variables (Chen & Hsu, 2009, p. 354). For example, there are significant correlations between the return on assets and the cash flow over sales ratio (r=0.483, p<0.05), between the logarithm of sales and the logarithm of firm age (r=0.367, p<0.05) as well as between the logarithm of capital intensity and the intangible asset intensity of a firm (r=0.340, p<0.05).

Therefore, variance inflation factors (VIFs) of independent and control variables were calculated to ensure that multicollinearity does not pose a problem in the underlying data set (Chen & Hsu, 2009, p. 354). VIFs are a widely used method to detect multicollinearity problems in data sets (Kutner, Nachtsheim, Neter, & Li, 1974, p. 408) and are used in many previous studies dealing with innovation performance regressions (cf. Block, 2012, p. 258; Chrisman & Patel, 2012, p. 987; Muñoz-Bullón & Sanchez-Bueno, 2011, p. 66). Typically, a threshold of 10 is taken as an indicator for multicollinearity and therefore serves as the cutoff in the underlying study (Kutner et al., 1974, p. 409). For the correlation of the key control variables with the explanatory variables, VIFs range from 1.11 to 1.63 and thus do not support a multicollinearity problem, as they are far below the cutoff value of 10 (cf. Chrisman & Patel, 2012, p. 987; Matzler et al., 2014, p. 326).

As can be seen in table 3, there is also a strong correlation between the founder ownership and the founder management variables (r=0.577 and p<0.05). Furthermore, the matrix shows significant correlations between the founder ownership and the founder governance variables (r=0.478 and p<0.05). The same pattern can be found for the correlations between family ownership, management, and governance variables with significant Pearson correlation coefficients of r=0.342 (p<0.05) and r=0.503 (p<0.05), respectively. Finally, the family management variable seems to be significantly correlated with the governance influence dimension (r=0.273, p<0.05). To tackle potential multicollinearity concerns of the independent variables, regressions are estimated by using different specifications (fixed effects and random effects models) to ensure the robustness of the results (cf. Block, 2012, p. 256). Furthermore, a number of robustness checks are carried out in section 4.4 to ensure that multicollinearity does not pose a problem in the underlying data set.

### 4.2. Innovation input (R&D intensity) regression

The results of the R&D intensity regression are reported in table 4. Hereby, model Ia and IIa are fixed effects panel regression models, whereas model Ib and IIb are random effects regressions. The effects of the control variables are as expected. As found in the study of Chrisman and Patel (2012, p. 988), the effect of the variable return on assets is positive, suggesting that firms with higher return on assets also have a higher R&D intensity. In line with previous studies, R&D intensity increases less proportionally with a firm's size, measured by the logarithm of total sales (cf. Anderson et al., 2012, p. 1748; Block, 2012, p. 259; Matzler et al., 2014, p. 326). In addition, older firms and firms with a higher capital intensity in the sample invest on average more in R&D expenditures and therefore positive effects can be found (Matzler et al., 2014, p. 326ff.). Leverage, on the other hand, is negatively correlated with R&D expenditures, indicating that high leveraged firms reduce R&D investments in order to service their debt (G. S. Hansen & Hill, 1991, p. 4). With

**Table 2:** Descriptive statistics.

|                                     | Obs  | Mean   | SD      | Min    | Max     |
| ----------------------------------- | ---- | ------ | ------- | ------ | ------- |
| R&D intensity                       | 727  | 0.15   | 0.52    | 0.00   | 5.15    |
| Patents granted                     | 786  | 78.82  | 270.64  | 0.00   | 3,131   |
| Ownership founder                   | 804  | 0.08   | 0.19    | 0.00   | 0.81    |
| Management founder                  | 804  | 0.09   | 0.21    | 0.00   | 1.00    |
| Governance founder                  | 804  | 0.04   | 0.12    | 0.00   | 1.00    |
| Ownership family                    | 804  | 0.10   | 0.20    | 0.00   | 0.89    |
| Management family                   | 804  | 0.02   | 0.10    | 0.00   | 1.00    |
| Governance family                   | 804  | 0.02   | 0.06    | 0.00   | 0.50    |
| Return on assets                    | 776  | 0.04   | 0.17    | -1.99  | 1.17    |
| Sales (in million)                  | 803  | 6,916  | 23,857  | 0.39   | 229,550 |
| Firm age                            | 799  | 49.95  | 51.36   | 1.00   | 269.00  |
| Capital intensity (in thousands)    | 800  | 291.34 | 1,550   | 0.72   | 22,200  |
| Leverage                            | 772  | 0.44   | 0.58    | 0.01   | 10.59   |
| Cash flow/sales                     | 801  | -0.02  | 0.92    | -14.64 | 9.36    |
| Intangible asset intensity          | 803  | 0.19   | 0.17    | 0.00   | 0.84    |

Source: own presentation based on STATA data analysis.

regard to the liquidity measure (cash flow in relation to total sales), data suggests a significant negative effect, indicating that higher liquidity in period t-1 leads to lower R&D intensity in period t (ceteris paribus), which is consistent with previous studies (cf. Anderson et al., 2012, p. 1751; Block, 2012, p. 259; Chen & Hsu, 2009, p. 356). For firm's intangible asset intensity, a positive effect is found, indicating that firms with a higher stock of intangible assets also have a higher R&D intensity (on average). Finally, industry fixed effects used in the random effects regression models are significant, because a joint test for significance that all industry dummies are equal to zero can be rejected at all conventional significance levels (p<0.000; Block, 2012, p. 258).

By looking at the independent variables of Model Ia and Ib, no significant effects for the ownership and the management variables can be observed. However, a significant positive effect for the governance variable ($\beta = 0.546$, p<0.05) can be found in model Ib, thereby partially supporting Hypothesis 1 of the underlying analysis. Therefore, a 10% increase of founders in the governance board is associated with an increase in the R&D intensity of around 5.46% (on average, ceteris paribus).[22,23] With regard to family firms, a significant negative effect for the management variable is found in model IIb ($\beta = -0.645$, p<0.10). Therefore, there is a partial support for Hypothesis 2 in the analysis. In contrast to lone founder firms, ceteris paribus, a 10% increase in family presence in the management board is associated with an decrease in the R&D intensity on average of around 6.45%. Finally, for the influence dimensions ownership and gover-

nance there are no significant effects for family firms. Both random effects models approximately perform equally well, since they explain around 43% (for model Ib) and 44% (for model IIb) of the differences in R&D intensity between firms.

4.3. Innovation output (granted patents) regression

The results of the patent count regression analyses are presented in table 5 of the underlying study. As pointed out in section 4.2, model Ia and IIa are fixed effects regressions, whereas model Ib and IIb are random effects regressions. Since the dependent variable patents granted is a (non-negative) count variable, the output of negative binomial regression models is presented.[24]

Again, the effects of the control variables in the second regression model meet the expectations. Firms past performance is likely to have a negative effect on innovation output (Matzler et al., 2014, p. 328). A significant positive effect on firm size can be found, indicating that larger firms generate more innovation output in terms of granted patents (Block et al., 2013, p. 188). As can be seen, older firms seem to file less granted patents, since the effect of firm age is, despite the lack of significance, negative in all four models of the patent regression analysis. Both, a firm's capital intensity and leverage show a significant negative effect, suggesting that firms with higher capital intensity as well as with higher leverage file less granted patents per year (Matzler et al., 2014, p. 328). Finally, R&D intensity shows the expected positive effect – firms with higher R&D intensity also file a significant higher number of granted patents (on average; J. A. Hansen, 1992, p. 40f.). No consistent effects could be found for either the liquidity variable (cash flow in relation to

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[22]Note that for an one unit (100%) increase, the effect on R&D intensity is around 54.60%.

[23]Also note that although a panel regression with lagged variables is carried out here, the interpretation of the effects should be taken in a correlational rather than in a causal manner.

[24]The model choice in favor of the negative binomial regression is discussed in section 3.3.

**Table 3:** Correlations.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) R&D intensity | 1 | | | | | | | | | | | | | | | | | | | | |
| (2) Log(R&D intensity) | .537* | 1 | | | | | | | | | | | | | | | | | | | |
| (3) Patents granted | -.055 | .065 | 1 | | | | | | | | | | | | | | | | | | |
| (4) Ownership founder | -.066 | .022 | -.127* | 1 | | | | | | | | | | | | | | | | | |
| (5) Management founder | -.028 | .006 | -.125* | .577* | 1 | | | | | | | | | | | | | | | | |
| (6) Governance founder | .036 | .039 | -.092* | .478* | .028 | 1 | | | | | | | | | | | | | | | |
| (7) Ownership family | -.096* | -.035 | .058 | -.222* | -.198* | -.153* | 1 | | | | | | | | | | | | | | |
| (8) Management family | -.052 | -.141* | -.056 | -.096* | -.086* | -.066 | .342* | 1 | | | | | | | | | | | | | |
| (9) Governance family | -.054 | .036 | .002 | -.135* | -.121* | -.093* | .503* | .273* | 1 | | | | | | | | | | | | |
| (10) Return on assets | -.521* | -.301* | .069 | .179* | .072 | .033 | .098* | .028 | .123* | 1 | | | | | | | | | | | |
| (11) Sales | -.067 | -.051 | .454* | -.125* | -.116* | -.092* | -.069 | -.059 | -.064 | .029 | 1 | | | | | | | | | | |
| (12) Log(sales) | -.404* | -.371* | .504* | -.238* | -.246* | -.198* | .195* | -.003 | .072 | .300* | .582* | 1 | | | | | | | | | |
| (13) Firm age | -.134* | -.165* | .262* | -.253* | -.241* | -.173* | .188* | .136* | .169* | .146* | .211* | .409* | 1 | | | | | | | | |
| (14) Log(firm age) | -.122* | -.134* | .213* | -.242* | -.248* | -.151* | .176* | .089* | .173* | .183* | .216* | .367* | .905* | 1 | | | | | | | |
| (15) Capital intensity | .053 | -.027 | .034 | .028 | -.073 | .122* | -.045 | -.023 | -.040 | -.038 | .088* | .068 | -.037 | -.054 | 1 | | | | | | |
| (16) Log(capital intensity) | .143* | .059 | .163* | -.072 | -.229* | .077 | .026 | -.001 | -.010 | -.076 | .267* | .282* | .048 | .027 | .597* | 1 | | | | | |
| (17) Leverage | -.141* | -.217* | .102* | -.041 | -.111* | .044 | .037 | -.084* | -.011 | -.096* | .221* | .275* | -.032 | -.029 | .013 | .025 | 1 | | | | |
| (18) Log(leverage) | -.139* | -.201* | .107* | -.053 | -.123* | .047 | .054 | -.071 | -.002 | -.091* | .202* | .279* | -.014 | -.013 | -.011 | .008 | .977* | 1 | | | |
| (19) Cash flow/sales | -.684* | -.314* | .059 | .078 | .000 | .000 | .076 | .027 | .051 | .483* | .051 | .307* | .106* | .120* | -.133* | -.152* | .110* | .111* | 1 | | |
| (20) Intangible asset intensity | .238* | .368* | .040 | .014 | -.049 | -.039 | -.045 | -.146* | -.050 | -.176* | -.037 | -.139* | -.233* | -.213* | .082* | .340* | -.008 | .012 | -.114* | 1 | |
| (21) Log(intangible asset intensity) | .160* | .333* | .081* | -.136* | -.084* | -.174* | -.095* | -.236* | -.095* | -.188* | .036 | -.051 | -.134* | -.122* | -.118* | .066 | -.020 | .018 | .001 | .747* | 1 |

Source: own presentation based on STATA data analysis, * p<0.05.

**Table 4:** Fixed and random effects regressions on R&D intensity (log).

| | Model Ia | Model Ib | Model IIa | Model IIb |
|---|---|---|---|---|
| | log(R&D intensity) | | | |
| Ownership founder | -0.037 | -0.268 | | |
| | (0.344) | (0.391) | | |
| Management founder | 0.010 | 0.032 | | |
| | (0.199) | (0.212) | | |
| Governance founder | 0.492 | 0.546** | | |
| | (0.317) | (0.278) | | |
| Ownership family | | | 0.051 | -0.150 |
| | | | (0.264) | (0.349) |
| Management family | | | -0.100 | -0.645* |
| | | | (0.127) | (0.373) |
| Governance family | | | -0.058 | -0.162 |
| | | | (0.093) | (0.155) |
| Return on assets | 0.339 | 0.270 | 0.306 | 0.233 |
| | (0.322) | (0.303) | (0.336) | (0.315) |
| Log(sales) | -0.014 | -0.201*** | 0.002 | -0.203*** |
| | (0.157) | (0.061) | (0.157) | (0.060) |
| Log(firm age) | 0.445 | 0.114 | 0.449 | 0.128 |
| | (0.295) | (0.120) | (0.296) | (0.122) |
| Log(capital intensity) | 0.076 | 0.032 | 0.083 | 0.038 |
| | (0.055) | (0.060) | (0.054) | (0.058) |
| Log(leverage) | -0.020 | -0.048 | -0.021 | -0.047 |
| | (0.060) | (0.059) | (0.060) | (0.059) |
| Cash flow/sales | -0.317*** | -0.290*** | -0.319*** | -0.288*** |
| | (0.092) | (0.084) | (0.093) | (0.082) |
| Log(intangible asset int.) | 0.019 | 0.142*** | 0.011 | 0.133*** |
| | (0.060) | (0.048) | (0.059) | (0.045) |
| Constant | -5.417 | 1.764 | -5.819 | 1.773 |
| | (3.842) | (1.602) | (3.806) | (1.544) |
| Year Dummies | Yes | Yes | Yes | Yes |
| Industry Dummies | No | Yes | No | Yes |
| $R^{2a}$ | 0.1207 | 0.4256 | 0.1151 | 0.4429 |
| N | 508 | 508 | 508 | 508 |

Source: own presentation based on STATA data analysis.
Models Ia and IIa are fixed effects panel regression models, Models Ib and IIb are random effects panel regression models,
Heteroscedasticity and autocorrelation robust standard errors in parentheses,
[a] For fixed effects models (Ia and IIa) the within $R^2$ and for random effects models (Ib and IIb) the between $R^2$ is presented,
* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

total sales) or for the intangible asset intensity. This may well be because the data set is not robust enough to capture these effects properly. Finally, time and industry fixed effects are significant, since a joint test for either of the dummy variables is significant at the 5% confidence level (Block et al., 2013, p. 188).

With regard to the independent variables, significant positive effects can be observed for both, lone founder as well as family variables. Therefore, in terms of the underlying hypotheses, there is partial empirical evidence for Hypothesis 3 and Hypothesis 4. Although no significant effect can be found

for the ownership variables for lone founder firms, management and governance seem to have a significant positive effect on innovation output in lone founder firms ($p<0.10$ for all three variables in model Ia and Ib).

Furthermore, there is empirical evidence for the family ownership variable – a significant positive effect on granted patents is found ($\beta = 1.235$, $p<0.05$ for model IIa and $\beta = 1.400$, $p<0.01$ for model IIb). Family management also has a significant positive effect in the fixed effects regression, indicating that more family members in the TMT are on average associated with a higher innovation output in terms of

**Table 5:** Fixed and random effects negative binomial regressions on granted patents (count variable).

|  | Model Ia | Model Ib | Model IIa | Model IIb |
|---|---|---|---|---|
|  | Patents Granted | | | |
| Ownership founder | -1.716 | -1.513 |  |  |
|  | (1.424) | (0.923) |  |  |
| Management founder | 1.466 | 1.469* |  |  |
|  | (1.061) | (0.755) |  |  |
| Governance founder | 2.153* | 1.652* |  |  |
|  | (1.247) | (0.885) |  |  |
| Ownership family |  |  | 1.235** | 1.400*** |
|  |  |  | (0.616) | (0.477) |
| Management family |  |  | 2.503** | 1.262 |
|  |  |  | (1.255) | (0.835) |
| Governance family |  |  | -0.670 | -0.741 |
|  |  |  | (0.972) | (0.854) |
| Return on assets | -0.226 | -0.842 | -0.376 | -0.945 |
|  | (0.878) | (0.721) | (0.875) | (0.700) |
| Log(sales) | 0.420*** | 0.609*** | 0.427*** | 0.619*** |
|  | (0.072) | (0.062) | (0.070) | (0.059) |
| Log(firm age) | -0.151 | -0.158* | -0.152 | -0.184* |
|  | (0.110) | (0.095) | (0.115) | (0.096) |
| Log(capital intensity) | -0.371** | -0.345*** | -0.336** | -0.323*** |
|  | (0.154) | (0.110) | (0.147) | (0.109) |
| Log(leverage) | -0.061 | -0.146* | -0.093 | -0.145** |
|  | (0.085) | (0.083) | (0.075) | (0.069) |
| Cash flow/sales | -0.034 | -0.034 | 0.013 | -0.037 |
|  | (0.239) | (0.133) | (0.246) | (0.142) |
| Log(intangible asset int.) | -0.038 | 0.023 | -0.009 | 0.041 |
|  | (0.092) | (0.071) | (0.095) | (0.072) |
| Log(R&D intensity) | 0.326*** | 0.512*** | 0.386*** | 0.556*** |
|  | (0.124) | (0.087) | (0.123) | (0.088) |
| Constant | -1.041 | -4.245** | -1.442 | -5.074*** |
|  | (1.783) | (1.978) | (1.767) | (1.948) |
| Year Dummies | Yes | Yes | Yes | Yes |
| Industry Dummies | No | Yes | No | Yes |
| Loglikelihood value | -805.90 | -1,409.17 | -803.72 | -1,406.15 |
| Wald $\chi^2$ | 339.17*** | 529.14*** | 361.35*** | 584.05*** |
| N | 358 | 507 | 358 | 507 |

Source: own presentation based on STATA data analysis.
Models Ia and IIa are fixed effects negative binomial regressions, Models Ib and IIb are random effects negative binomial regressions,
Standard errors in parentheses,
* p<0.10, ** p<0.05, *** p<0.01.

granted patents ($\beta = 2.503$, p<0.05).

### 4.4. Robustness checks

To examine the robustness of the main findings of the underlying study, the following section provides additional estimates.

First of all, the R&D intensity and patent regressions are performed without including time fixed effects, since technically a joint significance test carried out through the *test-parm* command in STATA does not indicate a significant joint influence of time effects in the underlying study. Omitting time fixed effects, however, leads to supporting results of the main findings regarding the R&D intensity regression. Apart from a negative significant effect for the founder ownership dimension in the patent regression, similar effects can be observed for the remaining influence dimensions for lone founder and family firms. However, the results from the main

model are expected to be more precise, as previous literature suggests implementing time effects to control for time invariant heterogeneity and for common shocks (cf. Block, 2012, p. 258; Chen & Hsu, 2009, p. 357; Chrisman & Patel, 2012, p. 985; Matzler et al., 2014, p. 325).

Second, the regressions were estimated by using a binary rather than a continuous measure. Therefore, firms were coded as lone founder firms, if one of the three influence dimensions takes a value greater than zero and as other firms if all three dimensions are equal to zero. The same procedure was carried out for the family influence dimensions of the sample firms. Therefore, all three influence dimensions were compressed into one binary variable, which is likely to be more inaccurate than the specification carried out in the main model. Even though not significant, the main result of the underlying study could be supported on a qualitative basis as the unreported model results show similar effects.[25] These results are also confirmed if a minority shareholder threshold of 25% for the ownership influence dimension is implemented.[26] Here, the unreported results indicate the same qualitative effects like those pointed out in the main findings. Finally, for the binary specification robustness check, the model was estimated by using binary variables for each influence dimension in lone founder and family firms. The corresponding results are again supported and foster robustness of the main findings of the underlying study.

Third, the robustness of the results is examined by an alternative definition of R&D intensity. Consistent with Block (2012, p. 254), R&D intensity was defined as the ratio of R&D expenditures in relation to a firm's total assets in this robustness check. In addition, the natural logarithm of total assets serves as a control variable for firm size, as carried out by Block (2012, p. 255). The unreported regression results are hereby consistent with the main findings in tables 4 and 5 for both analyses, R&D intensity and patent analysis. Furthermore, a third R&D intensity measure – defined as R&D expenditure in relation to the firm's number of employees (Barker & Mueller, 2002, p. 788) – was introduced. Again, the unreported results support the main findings of the underlying study, indicating the robustness of the main regression models.

Fourth, a special focus is placed on the innovation output regression by exchanging the dependent variable: instead of the filed number of granted patents, the filed number of applied patents served as the dependent variable in this robustness check. The remaining model was fitted analogous to the main model as described above. Again, the unreported effects of the fourth robustness check are qualitatively similar to the main findings displayed in table 5.

Lastly, the analysis was run by only taking lone founder and family firms into account and therefore, firms which are neither lone founder nor family firms were excluded from the sample. The unreported results of the last robustness check support the main findings in table 4 and 5. For the R&D intensity regression, similar significant effects can be found with this specification. Comparable significant effects can also be found in the patent regression for the founder influence dimensions, while in the case of family firms the effects can be confirmed on a qualitative basis. To sum up, including nonfamily firms in the main specification provides more conservative effects (Matzler et al., 2014, p. 329).

4.5. Controlling for potential self-endogeneity

In order to conclude the robustness checks of the empirical analysis of the underlying study, the following section discusses potential endogeneity problems that may occur in the patent regression model. Possible endogeneity problems arise when the relationship between innovation input and output is examined more closely: as discussed by Leten, Belderbos, and Looy (2007, p. 568ff.), firms learn to use their resources more efficiently and use these excess resources – such as R&D capacities – to invest into promising ideas and new technologies. To test for a potential endogeneity bias in the underlying data set, a Durbin Wu-Hausman test was performed. The unreported test statistic confirms an endogeneity problem with regard to the innovation input and output relationship for the sample data set. Therefore, firms' R&D intensity should not be considered as predetermined and the use of lagged independent and control variables may be not sufficient to avoid endogeneity in the analysis (cf. Czarnitzki & Kraft, 2009, p. 380). Thus, to control for potential endogeneity problems in the robustness check, an IV-2SLS regression was performed (Wooldridge, 2015, p. 461ff.).[27]

Since firms R&D intensity is to be instrumented, the challenge is to find an instrument that is on the one hand (positively or negatively) related to the omitted explanatory variable and on the other hand has no partial effect on the dependent variable granted patents (Wooldridge, 2015, p. 463). For the purposes of this robustness check, industry R&D intensity is expected to serve as a valid instrument for the first stage regression, as it determines the investment environment of the firm in the respective industry (Czarnitzki & Kraft, 2009, p. 375), and controls for systematic differences in firms innovation behavior (Matzler et al., 2014, p. 326). Therefore, industry R&D intensity is defined as R&D expenditure within an industry in relation to overall industry production (Matzler et al., 2014, p. 326). Since firms R&D intensity is instrumented by one variable (industry R&D intensity), the estimation model is just-identified.

Also, the instrument variable is strongly correlated with innovation input, but uncorrelated with the dependent variable of the innovation output regression (Matzler et al., 2014,

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[25]Note that the binary variable for lone founder firms still displays a significant positive effect ($\beta = 0.2764$, p<0.1) in the unreported R&D intensity regression (random effects specification).

[26]For Germany, 25% is the threshold for blocking minority (in German "Sperrminorität"), when according to the stock cooperation law, fundamental decisions can be made and substantial influence can be exerted (Czarnitzki & Kraft, 2009, p. 377).

[27]The random effects generalized least squares estimation method is presented (command *xtivreg, re*), as a Hausman (1978, p. 1251ff.) test prefers the use of a random effects model over a fixed effects model.

**Table 6:** Random effects instrumental variable regressions on granted patents over total sales (log).

| | Model I | Model II | Model III |
|---|---|---|---|
| | log(granted patents/sales) | | |
| Ownership founder | | -2.986*** | |
| | | (1.016) | |
| Management founder | | 2.082** | |
| | | (0.915) | |
| Governance founder | | 2.209** | |
| | | (0.859) | |
| Ownership family | | | -0.092 |
| | | | (0.543) |
| Management family | | | 1.051 |
| | | | (0.888) |
| Governance family | | | -1.175 |
| | | | (0.944) |
| Return on assets | 0.972 | 0.992 | 1.033 |
| | (1.039) | (0.973) | (1.050) |
| Log(sales) | -0.098 | -0.084 | -0.092 |
| | (0.078) | (0.076) | (0.081) |
| Log(firm age) | -0.279** | -0.287** | -0.298** |
| | (0.129) | (0.125) | (0.134) |
| Log(capital intensity) | -0.358** | -0.359** | -0.355** |
| | (0.163) | (0.157) | (0.166) |
| Log(leverage) | 0.059 | 0.046 | 0.067 |
| | (0.114) | (0.111) | (0.114) |
| Cash flow/sales | 0.049 | 0.040 | 0.037 |
| | (0.206) | (0.195) | (0.204) |
| Log(intangible asset int.) | -0.066 | -0.052 | -0.062 |
| | (0.123) | (0.116) | (0.125) |
| Log(R&D intensity)[a] | 1.019*** | 0.972*** | 1.008*** |
| | (0.347) | (0.311) | (0.349) |
| Constant | -9.029*** | -9.299*** | -8.851*** |
| | (2.260) | (2.183) | (2.330) |
| Year Dummies | Yes | Yes | Yes |
| Industry Dummies | Yes | Yes | Yes |
| $R^{2}$[b] | 0.5769 | 0.6273 | 0.5747 |
| N | 301 | 301 | 301 |

Source: own presentation based on STATA data analysis.
All models (I, II, and III) are random effects instrumental variable panel regression models,
Standard errors in parentheses,
[a] Instrumented through log(industry R&D intensity),
[b] For all models, the between $R^2$ is reported,
* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

p. 326) and therefore serves as an adequate instrument for the analysis. For defining industry R&D intensity, industry level data was obtained through the structural analysis databases on the organization for economic co-operation and development (OECD) website (OECD, 2020, n.p.). In contrast to the main model, where the dependent variable granted patents was treated as count data, for the IV-2SLS regression the treatment is continuous. Therefore, the de-

pendent variable for the last robustness check is defined as the relation between the number of granted patents filed per year by a firm and the respective total sales in order to capture size effects and allow for a comparison between firms (Matzler et al., 2014, p. 324). The log (natural logarithm) of the dependent variable is applied in this empirical analysis in order to account for the skewness of the variable.

The results of the patent regression with firms R&D in-

tensity being instrumented is presented in table 6. The remaining model is fitted in the same manner like in the main empirical analysis. Model I is only fitted with control variables, while Model II includes the independent variables for lone founder firms and Model III for family firms, respectively. With regard to the first-stage predictions of the instrumented R&D intensity a significant positive effect is reported in all three models. Interestingly, the ownership dimension for lone founder firms is significantly negative ($\beta =$ −2.99, p<0.01), therefore supporting the qualitative effect of the main findings of the underlying study. With regard to the management and governance variables, significant positive effects can be found for lone founder firms ($\beta = 2.08$, p<0.05 and $\beta = 2.21$ and p<0.05, respectively), supporting the main findings in section 4.3. In contrast, no significant effects can be found for the family variables of interest.

## 5. Discussion

### 5.1. Discussion of the results

This study makes an empirical contribution to the field of lone founder and family firms' innovation behavior. The results presented above show that founder influence is positively correlated with the innovation input proxy R&D intensity. In particular, a significant positive effect for the governance influence dimension for lone founder firms was found in the underlying study. In contrast, for family firms, a negative effect on R&D intensity was identified, especially when considering the management influence dimension. Moreover, it seems that both, lone founder and family firms produce more innovations compared to other firms, if granted patents are used as a proxy for innovation outcome. While the effect for family firms becomes insignificant once controlled for potential endogeneity, a robust positive effect of the founder influence dimensions management and governance can be found.

With regard to R&D investments in lone founder firms, the results are similar to Block (2012, p. 256): this special type of firm with a founder in an influential position in the firm invests more in R&D than other firms. Moreover, consistent results can also be identified for the effects of R&D investment in family firms, as many previous studies have found a negative effect of family influence on the level of firm's R&D intensity. (cf. Chen & Hsu, 2009, p. 355f.; Chrisman & Patel, 2012, p. 987; Matzler et al., 2014, p. 328; Muñoz-Bullón & Sanchez-Bueno, 2011, p. 67). Therefore, from an agency point of view, it seems that agency costs are not as severe for lone founder firms as for family firms when considering R&D investments (Block, 2012, p. 260). With regard to the ownership influence dimension, it is remarkable that recent studies treat the ownership influence dimension as a synonym with the power a family can exert in the firm (Chen & Hsu, 2009, p. 347f.). However, a more direct way of influencing the firm's behavior is through the management and governance influence dimension (Matzler et al., 2014, p. 329), since especially board representation seems to have a

strong influence on the allocation of R&D resources: the substantial influence on firms' investment decisions implies that they will be the main depositors of family interests (Matzler et al., 2014, p. 329). In line with this explanation, the ownership influence dimension does not seem to have a significant impact on the level of R&D investment in the underlying study. In contrast, the significant negative coefficient for family management indicates that family firms suffer from problems of management entrenchment (Morck & Yeung, 2003, p. 370ff.). At an early stage, managers invest heavily in R&D activities to produce good results and demonstrate competencies in management positions, whereas in later stages managers may pursue a more risk-averse investment strategy with regard to R&D, as they have less pressure to prove themselves (Kor, 2006, p. 1083). This reluctance to invest in R&D is not to be expected for lone founder firms: unlike long-tenured members in the TMT who may be reluctant to invest in R&D, founders as typically short-tenured managers of a firm, act as potential protectors of ongoing innovation efforts (Kor, 2006, p. 1093).

With regard to the entrepreneurial orientation of firms, it appears that family firms seem to lose part of their entrepreneurial orientation through the transition from a lone founder to a family firm (Block, 2012, p. 261f.). As a result, family firms may become more hostile to change over time and adopt more conservative investment strategies that may limit their future growth (Miller et al., 2011, p. 4). This tendency to limit future growth potential can be seen as a form of agency costs, more precisely as altruism agency costs (Schulze et al., 2001, p. 102f.).[28] In summary, family firms seem to follow a more conservative and less risky strategy with regard to R&D investments, as they are less concerned about the firms future growth (Block, 2012, p. 262).

The second part of the underlying study focused on the impact on innovation output. In contrast to most studies on innovation input (De Massis et al., 2012, p. 15), the empirical evidence is very mixed in this context (Classen, Carree, Gils, & Peters, 2014, p. 596). As Classen et al. (2014, p. 597) argue, these variations are partly due to the different proxies of innovation output in the respective studies. For example, Czarnitzki and Kraft (2009, p. 382) find in their analysis of German joint-stock companies that firms with a dispersed ownership structure file for more patents than firms with concentrated shares, as it is particularly the case for family firms (Classen et al., 2014, p. 596). In contrast, Anderson et al. (2012, p. 1745) find a similar number of patents for family and non-family firms by investigating large American companies in their investigation period from 2003 until 2007. Moreover, Matzler et al. (2014, p. 328) find positive effects for the family management and governance influence dimension for German listed companies by applying an IV-2SLS regression approach. On the other hand, Block et al. (2013, p. 190f.) examine the difference between family and lone

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[28]Altruism in terms of family firms postulates that family members could overstate their actual needs and could thus withdraw resources from the firm (Block, 2012, p. 251).

founder firms in terms of patent citations for S&P 500 firms: they find a positive relationship for the influence dimensions of lone founder firms, whereas family participation is negatively correlated with their innovation output proxy.

Interestingly, the definition of lone founder and family firms varies heavily across these studies: for example, Anderson et al. (2012, p. 1747) define family firms by using a binary variable that takes the value one if the family holds 5% or more of the firms' ownership stake. In line with this approach, Czarnitzki and Kraft (2009, p. 376f.) identify firms' dominant capital holders through a binary variable where the threshold for taking the value one is 25% of the shareholdings, in order to account for Germany's peculiarity of blocking minority. Block et al. (2013, p. 186) decide to apply a mixed definition approach: on the one hand, they define the management variable of lone founder and family firms in a binary manner, while they use a continuous measure for the ownership influence dimension. Lastly, Matzler et al. (2014, p. 325) apply a continuous measure for the three influence dimensions ownership, management, and governance, providing the most accurate and comprehensive measure for family firms. Nevertheless, they do not distinguish between lone founder and family firms in their empirical analysis, ignoring the fact that lone founder and family firms have different characteristics and that they might be two distinct types of firms (Block, 2012, p. 249).

In contrast to all those studies, the empirical analysis presented tried to capture all three relevant influence dimensions (ownership, management, and governance) through a continuous measure, thus enabling a comprehensive analysis between lone founder, family and other firms. Following the resource-based view of the firm, which postulates that the use of unique idiosyncratic resources requires an active involvement in the firm (Matzler et al., 2014, p. 329f.), especially the management and governance influence dimension should be highly relevant. More precisely, a higher number of founders or family member in the respective TMT or supervisory board should result in a higher likelihood in using these unique resources (Matzler et al., 2014, p. 330). Therefore, as argued by Maury (2006, p. 322), the distinction between actively and passively managed firms might be of high relevance. These arguments support the mixed empirical results of the underlying study with regard to the ownership influence dimensions for both, lone founder and family firms. As can be seen from the comparison of tables 5 and 6, the coefficient for the ownership dimension for lone founder firms is insignificant for the count method while it becomes significantly negative when applying the IV-2SLS regression approach and therefore when controlling for potential endogeneity ($\beta = -2.99$, p<0.01). Since the ownership effect for family firms changes from a highly significant positive correlation ($\beta = 1,40$, p<0.01) in the count model to an insignificant effect in the IV-2SLS regression, similar inconsistencies can be found for family firms. Consequently, a passive management of the firm might not be sufficient to deploy founder- and family-specific resources to achieve a significantly higher innovation output compared to other firms (cf. Matzler et al.,

2014, p. 330).

Consistent and robust effects could only be identified for the management and governance variable of lone founder firms, indicating that actively managed lone founder firms are able to produce more innovation output compared to other firms (Block et al., 2013, p. 192).[29] Consequently it can be concluded that only founders in the TMT and in the supervisory board are able to create an unique interaction between themselves and the firm, through which resource advantages and capabilities emerge (cf. Matzler et al., 2014, p. 330). These bridges between founders and their firm therefore generate distinctive resources, that enable an efficient exploitation of the innovation input (cf. Matzler et al., 2014, p. 330). In addition, lone founder firms have the advantage that no family members claim resources that could be used to finance fruitful innovation projects (Miller et al., 2011, p. 4). These family priorities, such as maintaining control of the business, can lead to actions that limit a firm's resources and capabilities (Block et al., 2013, p. 182f.). Another contribution to the resource-based view of the firm with regard to the inconsistent effects for family firms can be found by an in-depth look at the human capital employed in these firms. A recent study by Thornhill (2006, p. 699f.) shows that in innovative and technological environments, firm performance is heavily dependent on retaining a highly skilled workforce. However, as shown by Pérez-González (2006, p. 1585), family firms that promote family CEOs in their firms do significantly hurt their performance when family CEOs did not attend a selective undergraduate institution. Family firms might therefore tolerate below optimal human capital in strategic positions and thus possibly harm the effective management of resources (Block et al., 2013, p. 192). In summary, from this study's perspective, founders in active management and supervisory positions are able to produce superior innovation input and output, while family members lacked in being productive innovators.

## 5.2. Theoretical and managerial implications

As the results of the underlying study show, lone founder firms invest more in R&D compared to other firms, while family firms invest less. Since certain family members might no longer be actively engaged in the firm, they could view the firm as a source of private income (Block, 2012, p. 263). As a result, family firms may become hostile over time and pursue more conservative investment strategies that limit future growth potential (Miller et al., 2011, p. 7). The lack of active involvement of some family members could lead to a lack of understanding of the underlying processes and the industry, especially in rapidly changing environments they may no longer be able to carry out effective monitoring (Block,

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[29]Note that the management variable for family firms becomes insignificant when the IV-2SLS regression method is applied. However, this change of significance may be due to the decreasing number of observations, so the data may not be able to capture the effects adequately. Qualitatively, the family firm management variable is positive as in the results of the main model.

2012, p. 263). This resulting ineffective R&D monitoring may consequently pose a threat to the competitiveness of the firm (Block, 2012, p. 263). From a managerial point of view, however, the overall effect of innovation on firm performance is an aggregate effect resulting from both, positive as well as negative mediating effects (Rosenbusch, Brinckmann, & Bausch, 2011, p. 444). Thus, higher innovation input does not necessarily mean higher innovation output in a similar way (Matzler et al., 2014, p. 330), and vice versa. Rather, it seems that firms need to develop, communicate, and establish an innovation orientation and mentality within the firm in order to fully exploit their innovation potential (Rosenbusch et al., 2011, p. 452). This innovation orientation can thus leverage the innovation potential to develop more sophisticated firm goals and could shift resources to areas where they create more value (Rosenbusch et al., 2011, p. 452).

Likewise, since managers are the main decision makers in the firm and therefore often decide on R&D investments, improved communication between the TMT and other people who may contribute important insights, expertise, and experience with innovation projects is important (Chen & Hsu, 2009, p. 359). As R&D projects are complex and require the knowledge of several experts, it is important to foster fruitful communication between managers and supervisory boards (Kor, 2006, p. 1081ff.). This complexity is particularly difficult to manage for relatively new and small firms, so they should consider seeking the advice of independent outsiders (Chen & Hsu, 2009, p. 359), as is the case with consultancies specializing in R&D or innovation projects. In line with this argument, Block et al. (2013, p. 193) suggest appointing academic or industry experts to review the innovation portfolio of the firm in order to reduce the complexity of R&D investment decisions for the TMT.

## 5.3. Limitations

A number of limitations apply for the underlying study, which provide opportunities for future research. First, the results of this empirical study are limited to German listed companies with its distinct governance and two-tiered system (Matzler et al., 2014, p. 330). Therefore, non-listed, privately held firms were not subject to this study. Second, an omitted variable bias could be present in the underlying study, since there are factors which could have an effect on the family or founder influence dimensions. For example, Chen and Hsu (2009, p. 353f.) consider institutional stock ownership – defined as the number of shares hold by institutional investors in relation to the total number of shares outstanding – as it is likely to have an effect on firms' innovation activities (Bushee, 1998, p. 330). However, institutional ownership was not taken into account in the underlying study because detailed data were not available. In addition, firm risk is likely to influence firms' investment decisions and therefore the firms' beta obtained from the capital asset pricing model can be used as an additional control variable (Miller et al., 2007, p. 838). Third, the sample could be subject to the survival bias: assuming that founders are willing

to take higher risks than families, founder firms also have a higher risk of failure (Block et al., 2013, p. 191). Since the sample only includes firms listed in the CDAX from 2013 through 2017, the underlying sample period could lead to distorted results. Fourth, in the case of the patent regression, the count data granted patents served as the dependent variable. As argued in previous studies, this measure could have some drawback since firms might patent for strategic reasons and it is generally perceived as noisy (cf. Block et al., 2013, p. 186). Therefore, patent (forward) citations or sales generated with new product innovations could be taken into account as alternative measures to mitigate these disadvantages (Matzler et al., 2014, p. 331). The variable granted patents in this study only serves as a rough approximation for (intermediate) innovation output und further studies could focus on taking an alternative dependent variable in the empirical analysis to account for the quality of the firms' innovation output. Fifth, the moderating effect of lone founder and family influence on innovation input and innovation output was not considered in this study, as argued by Liang, Li, Yang, Lin, and Zheng (2013, p. 680). Note that the study is also limited by the availability of data, as firms were excluded from the data set when reliable data were not available. Finally note that the interaction effect of CEO duality, as considered by Chen and Hsu (2009, p. 351), is not the subject of the underlying study, as Germany's system is two-tiered and therefore the management and governance influence dimensions are strictly separated and mutually exclusive (Klein, 2000, p. 167).

## 5.4. Directions for future research

As mentioned in section 5.3, future research should focus on different samples in terms of geography and firm size in order to account for cross-country differences in ownership structures, TMT as well as supervisory board composition (Matzler et al., 2014, p. 331). In addition, the influencing factors of the underlying study (ownership, management, and governance) are only three factors that influence R&D expenditure and innovation output: the degree of technological diversification (Garcia-Vega, 2006, p. 242) and the participation of star scientists in firms (Zucker, Darby, & Brewer, 1998, p. 302) could also be included as control variables in the empirical analysis to account for a potential omitted variable bias. Moreover, the number of granted patents in the second part of the underlying study does not take into account quality aspects, so the focus should be on other dependent variable for innovation output. One proposal for future research would be to use of patent citations or, if available, the sales generated with newly introduced and developed products. As also mentioned by Anderson and Reeb (2004, p. 234), the question arises whether different families communicate with each other and thus whether families consult and advise other families with their experience and expertise. In addition, the composition of the TMT is likely to affect the innovation performance of lone founder and family firms (Baysinger & Hoskisson, 1990, p. 74). Including these two arguments in an empirical analysis would

be another promising research approach. As mentioned several times in the study, family businesses could pursue other than purely economic goals. The closer integration of family-specific goals in future research could provide an explanation for the importance of innovation performance. This raises the interesting question, what type of agency costs are likely to have the greatest impact on innovation performance for lone founder and family firms. Finally, the transition of lone founder to family firms results in lower R&D spending. A more fine-grained view of this transition and thus a distinction between first-generation family firm, second- or third-generation family firms would be a promising stream of future literature. The empirical implementation would require a more detailed dataset with a large sample size, but this fine-grained differentiation within the area of family firms would allow an investigation of (multi-) generational family effect on the innovation performance of firms.

## 6. Conclusion

Drawing on the agency perspective and the resource-based view of the firm, this study examines the impact of lone founder and family influence on innovation input and innovation output. Using a panel data set of 165 German listed companies from 2013 through 2017, the innovation behavior was analyzed by means of regression analyses. In contrast to most previous studies, contextual heterogeneity factors are taken into account to provide a better understanding of how different firms characteristics influence their propensity towards innovation (De Massis et al., 2012, p. 20f.). By separating the lone founder and family effect into ownership, management, and governance, the purpose of this study was to reduce conceptual shortcomings and empirical uncertainties (De Massis et al., 2012, p. 20), thereby extending the growing literature in the field of family and lone founder firms. In this context, the study examines three different types of companies: lone founder, family and other firms. In order to answer the burning question of whether lone founder and family firms differ in terms of innovation behavior, the paper focused on examining the differences between family and lone founder firms in the context of innovation input and output.

In the first part of the underlying study, the main findings regarding innovation input indicate that, similar to many previous studies, a negative effect was found for the influence dimension of family management (cf. Chen & Hsu, 2009, p. 355f.; Chrisman & Patel, 2012, p. 987; Muñoz-Bullón & Sanchez-Bueno, 2011, p. 67). In contrast, lone founder firms seem to invest more in R&D than other firms: a positive relationship was found for the founder governance dimension in the random effects panel regression model for innovation input. Thus, it was concluded that, that from an agency point of view, agency costs seem to be less severe for lone founder firms than for family firms when considering R&D investment strategies (Block, 2012, p. 260). While founders act as potential protectors of ongoing innovation efforts (Kor, 2006, p. 1093), it has been argued that family firms seem to follow

a more conservative and less risky strategy thereby limiting the firms future growth potential (Block, 2012, p. 262).

These results of the innovation input regression do not necessarily mean that family firms are less productive in terms of innovation activities: as long as they manage the transition from lower innovation input to superior innovation output, they can still be superior innovators. This idea was the reason for the second analysis regarding innovation output. In the second part of the underlying study, a negative binomial regression model was applied to account for the count nature of the dependent variable granted patents. The results of the main findings indicate a consistent influence of founders in management and supervisory positions in their firm: a significant positive effect for the management and governance variable of lone founder firms was found in both, the count regression model as well as after controlling for potential self-endogeneity by applying an IV-2SLS regression approach. Therefore, it seems that founders in active positions in their firm are able to translate their superior innovation input into superior innovation output. By drawing on the resource-based view of the firm, it was argued that only founders in active positions in the firm are able to create an unique interaction between themselves and the firm, through which resource advantages are likely to emerge.

In contrast, it was found that family members are apparently incapable of achieving unique resource advantages, as no consistent effects were found for the three influence dimensions ownership, management, and governance. It was argued that family priorities, such as maintaining control of the firm, can lead to actions by family members that limit the firm's resources and capabilities (Block et al., 2013, p. 182f.). Another explanation was found by the human capital employed in family firms: as family firms regularly employ family CEOs, they might tolerate suboptimal human capital in strategic positions in their firm and thus possibly harm the effective management of the firm's resources.

In summary, the results of the underlying study imply that founder firms superiorly invest in innovation and strengthen their competitive position in the market through their entrepreneurial orientation. Family firms, on the other hand, might weaken future growth potential as they invest less in R&D and are not able to convert this lower input in superior innovation output.

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# The glamorization of overwork - an empirical study of causes and perceptions of excessive work attitudes in the pursuit of managerial careers

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**Abstract**

Excessive work behavior remains an issue in pursuing managerial careers. In this context, the glamorization of overwork takes on a crucial role, meaning that unhealthy work behavior is often falsely portrayed in a positive light. This paper provides an overview of influencing factors stimulating overwork behavior and its glamorization within different settings. Relating thereto, a qualitative research approach in the form of semi-structured open interviews was employed. Building on the main propositions of the Job Demands-Resources model (JD-R), this paper finds that individuals are inclined to mirror the behavior of others. In addition, job demands emerging on multiple levels and personality-related intrinsic factors have significant explanatory power for the development of overwork tendencies. The empirical results further reveal that the level of perceived familiarity and trust plays a decisive role in whether individuals are prone to glamorize unhealthy work attitudes. In both professional and non-professional environments, low to medium perceived levels of familiarity and trust in combination with certain stimuli appear to spark the active emphasis on excessive work behavior or the neutralization of strain. In turn, in high-trust settings, this cannot be observed.

*Keywords:* Workaholism; Overwork; Work engagement; Job Demands-Resources model.

## 1. Introduction

### 1.1. Background, problem definition, and relevance of the topic

Changed conditions and perceptions concerning work situations, the value and meaning ascribed to work, and employment uncertainties appearing in the form of decreasing job securities have attracted considerable attention in recent years. In the past, especially in the 1970s, concerns arose that the traditional approach to work would soon become replaced by a greater focus on leisure, a notion which has not been confirmed by research. Today, work ethic continues to be strong and is even amplified in some cases (Harpaz & Snir, 2003, pp. 291–292). Additionally, significant advances in technology or communication are not in fact utilized to generate more spare time for workers (Porter, 2004, p. 436). Instead, research argues that recent changes in organizational landscapes, globally-executed competition among firms, as well as technological developments have exerted firmer pressure on individual employees, as far as their contributions and efforts are concerned (Balducci et al., 2021, p. 6). This implies that in some situations, individuals feel obliged to devote extra hours or overcommitment to their work, develop workaholic tendencies (Harpaz & Snir, 2003, p. 292), or even engage in presenteeism, meaning showing up for work while being ill (Ruhle, Breitsohl, Aboagye, & Baba, 2020, p. 345).

The major implications and consequences of overwork and its different manifestations are investigated in a broad stream of literature across various disciplines, such as economics, organizational psychology, human resource management, and health sciences (Ruhle et al., 2020, p. 344). Overwork can generally be viewed as a harmful state for individual workers, as it is associated with negative effects on one's health and well-being (Burke & Cooper, 2008, p. 65). While research suggests that the human element is incredibly crucial for developing sustainable organizations as a resource, the focus on the physical and psychological well-being of employees also needs to be increased by businesses (Pfeffer, 2010, pp. 2–4). In other words, building an effective organization implies employing a healthy workforce (Burke & Cooper, 2008, p. 4).

The relevance of this topic becomes apparent through consequences emerging from two distinct yet highly interconnected contexts: individuals and organizations. The unfavorable state of overwork leaves individual employees mentally exhausted and emotionally drained, which commonly links to an extensive list of health or well-being-related consequences (Porter, 2004, pp. 424, 436). In addition, compulsive work attitudes may also endanger social functioning, family life, or relationship building, which may overall negatively alter the personal happiness of those affected (Antosz, Rembiasz, & Verhagen, 2020, p. 1006; Harpaz & Snir, 2003, p. 292; Sussman, 2012, pp. 4–5). In Japan, for example, this problem takes on entirely different dimensions. The widely known phenomenon of *karoshi* refers to a syndrome prompted by overwork. This reflects the deterioration of an employee's health to such a vast extent that individuals are either permanently incapable of performing their work or they die (Kanai, 2009, p. 210). Thus, the problematic impacts on an individual are essential to explore further.

Furthermore, overwork also carries substantial costs for organizations and, more broadly, society in general. For instance, Antosz et al. (2020, p. 1006) stress that job performance is significantly worsened, as working excessively long hours may also induce burnout or increase the likelihood of work-related accidents. Moreover, Balducci et al. (2021, p. 9) refer to studies that associate excessive work behavior with reductions in work quality. On top of these arguments, the relevance and urgency of dealing with this issue also become apparent when scrolling through social media platforms. Statements found on social networks, such as Twitter, support this issue further. For instance, a recent post gone viral by Katy Leeson stresses that burnout stemming from overwork is often publicly portrayed as "badges of honor" (Leeson, 2020). The entrepreneur Elon Musk declared in 2018 that "(...) nobody ever changed the world on 40 hours a week" via his Twitter account (Musk, 2018), also underscoring the glamorizing of excessive work attitudes and long working hours.

Now that the relevance of the topic of overwork, including a brief overview of the serious risks and consequences has been mapped out, the research objective must be specified. Broadly formulated, this Master's thesis aims to focus primarily on exploring how and why unhealthy work attitudes are encouraged, applauded, or reinforced. In other words, the glamorization of overwork and its underlying causes represent the primary interest of this study. Details of the research aim will be discussed in the subsequent section.

### 1.2. Research aim

The previous section sheds light on the implications and effects centered around overwork. The consequences associated with such work behaviors have largely been addressed by scholars from multiple disciplines. Therefore, the concept of overwork can be regarded as a thoroughly researched field of interest (see e.g., Burke & Cooper, 2008; Harpaz & Snir, 2003; Ruhle et al., 2020). While such outcomes are crucial in highlighting the relevance and basic nature of this issue, the

causes of and reasons for excessive work attitudes largely remain unclear at this point. Indeed, the question of why individuals are driven to work beyond mental or physical capacities is rarely addressed in relevant academic literature (Burke & Cooper, 2008, p. 61; Peiperl & Jones, 2001, p. 369), resulting in a lack of theoretical frameworks or development in this area (Douglas & Morris, 2006, p. 394). Furthermore, when reviewing related literature, no studies could be identified that specifically address or investigate the glamorization of the overwork phenomenon as such. Therefore, this Master's thesis seeks to address these gaps.

In short, the aim of this study is to identify the nature of persistent unhealthy work attitudes and their various manifestations, particularly focusing on potential causes of overwork. Furthermore, this Master's thesis seeks to scrutinize why excessive work practices are often mistaken for outstanding effort or usual behavior, specifically in the pursuit of successful managerial careers. To this end, this thesis will use empirical results of qualitative interviews to specify, validate, and add to the work's theoretical contributions. The emphasis on managerial career paths in the context of this Master's thesis is due to the fact that overwork seems to be largely concentrated especially in managerial and leadership positions. According to Burke and Cooper (2008, p. xi), statistical evidence shows that managers are particularly prone to working overtime. Galinsky et al. (2005, p. 6) support this with findings from their study, stating that individuals working in managerial positions and in those occupations assigning high levels of responsibility tend to typically be more overworked than others. Moreover, Hassard, Morris, and McCann (2012, pp. 590–592) stress that managerial development trajectories are drastically changing, with mitigating effects on the career prospects of managers in modern organizational contexts, which heightens competition among managers. Relating to this, Liang and Chu (2009, p. 654) further state that competitive work climates are likely to evoke unhealthy work behaviors among co-workers. If higher competition is perceived as intensified work pressure, higher job demands in the form of necessary efforts and skills may translate into job stressors (Bakker & Demerouti, 2007, p. 312). The limitation to this group thus excludes other occupations (e.g., in the health or educational sector), as different physical, social, psychological, and organizational aspects are likely to be prevalent in those professional fields (Bakker & Demerouti, 2007, p. 311).

In this respect, this Master's thesis aims to build a cohesive understanding of major underlying causes of overwork and must therefore draw on several disciplines and perspectives. Many scholars have assumed that individual characteristics and genetic underpinnings have great explanatory power for overwork tendencies (Burke & Cooper, 2008, pp. 90–92; Mazzetti, Guglielmi, & Schaufeli, 2020, p. 2). However, in line with Mazzetti et al. (2020, p. 2), merely looking at individual traits is insufficient, as causes of such work behavior are considered completely independent of external environmental characteristics. In a similar vein, empirically-established results indicate that the interplay of numerous

factors may cause excessive work attitudes to develop. Efforts toward an integral view have been lacking in previous investigations of overwork (Mazzetti et al., 2020, pp. 1–2). Building on this, several levels of causes will be addressed in this paper.

Using a multilevel approach, this Master's thesis will address the following **research question:**

> *Which individual variables, situational factors and interpersonal relationships stimulate the emergence of excessive work attitudes and consequently, the glamorization of overwork among individuals in the pursuit of managerial careers?*

With regard to the research question, two subordinate goals arise, since theoretical foundations are based on different explanatory approaches, as outlined in this thesis. This again calls for a division into two sub-questions to facilitate achieving the proposed research aim. They can be stated as follows:

> **Sub-question 1:**
>
> *Which individual variables, situational factors and interpersonal relationships stimulate or favor the emergence of excessive work attitudes?*
>
> **Sub-question 2:**
>
> *How does the glamorization of overwork arise from heavy work investment in the pursuit of managerial careers?*

1.3. Selected approach and structure of the thesis

Given the outlined research question and its division into two-sub questions, the structure of this paper is strongly geared towards their comprehensive answering. The first part of this Master's thesis is concerned with understanding the concepts and definitions behind the notion of overwork. This is achieved by means of secondary research in the form of academic journals, as well as through scientific works in the field. In this respect, the theoretical review intends to explain the fundamentals of the issue as a first step, and to then delve deeper into the motivations or causes of those who work beyond their limits.

Following this introduction, the overall definition of overwork and its difference to other related terms and concepts are described in detail. This also involves briefly highlighting the most important consequences and effects of workaholic behaviors at the individual and organizational level. In doing so, this thesis establishes a clear understanding of the phenomenon of overwork. This is crucial since the outlined perspectives will serve as a basis for arguments and concepts introduced later in this work. The Master's thesis then shifts to the different potential aspects acting as causes of overwork behavior and its symptoms. In view of this, this paper will use the theoretical Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007), provided that additional literature-based arguments will be framed into its central assumptions. For one thing, external influences prevalent

in specific environments and inducements of excessive work originating from social or interpersonal relationships, for instance, with supervisors, colleagues or within family settings will be investigated (see, e.g., Endriulaitienė & Morkevičiūtė, 2020; Halbesleben & Buckley, 2004; Liang & Chu, 2009; Mazzetti et al., 2020; Molino, Bakker, & Ghislieri, 2016). In addition to this, this paper draws on personality theories in order to identify possible personality traits and characteristics of individuals that stimulate or reinforce tendencies toward unhealthy work practices further (see, e.g., Burke & Cooper, 2008, p. 92; Liang & Chu, 2009, p. 657; Stoeber & Damian, 2016, p. 265). Altogether, from a literature-based perspective, sub-question 1 is answered with relevant literature related to the overwork phenomenon, embedded in core assumptions of the JD-R model. Additionally, the conducted empirical investigation in the second part of this thesis will contribute heavily to answering this sub-question.

In a second step, this Master's thesis is concerned with investigating sub-question 2, aiming to answer why overwork is often mistaken for exceptionally high work performance, laudable commitment, or usual behavior, and in some cases, is even publicly glamorized by those affected. Here, two particular research areas are deemed relevant: the notion of work engagement (see, e.g., Korunka, Kubicek, Schaufeli, & Hoonakker, 2009; Mazzetti et al., 2020) and the fundamental ideas behind Alvesson's (2013) concept of the *triumph of emptiness*.

With theoretical findings in mind, this Master's thesis will further empirically expose the causes and motivations behind the glamorization of overwork. Regarding methodology, a qualitative approach by means of in-depth interviews will aim to answer the stated research question. Therefore, the second part of this work presents the research design, collection of data, as well as other relevant aspects in this regard to finally shed light on the results of the empirical research conducted. Following the summary of empirical findings, this thesis ultimately leads to a discussion, which attempts to comprehensibly compile and link theoretical literature-based inputs with practical implications. Finally, this study will conclude with recommendations for future research.

## 2. Literature review

The following chapter represents the literature-based part of this Master's thesis. The first section aims to clearly outline the concept of overwork to then distinguish the term from similar or related theoretical views as a further step, in order to establish an understanding of the phenomenon and different forms of excessive work patterns. Indeed, a number of factors may appear relevant in explaining what being overworked truly means, while the number of working hours per day or week, as well as the individual preferences regarding how much an employee wishes to work, appear to be of utmost significance (Galinsky et al., 2005, p. 3). Secondly, antecedents or causes of workaholic behavior are discussed in detail. In this regard, particular attention is paid to the JD-R model (Bakker & Demerouti, 2007), while situational

or individual factors emerging in this context are also closely assessed. Finally, the glamorization of overwork is linked to relevant literature streams.

## 2.1. Definition of the term overwork

According to Burke and Cooper (2008, p. 65), overwork can be described as the state at which the number of working hours spent begins to "entail escalating risks or harms beyond those associated with normal, standard, agreed-upon hours". Given this definition, *overwork* takes on a negative connotation. More precisely, cumulative effects of working at overcapacity may seriously impair an individual's mental and physical health, or may also lead to a deterioration of one's quality of life in the long term (Burke & Cooper, 2008, p. 65). These negative effects may not only impact individuals on a personal level, but also affect their families, employers, and when viewed from a broader perspective, entire economies (Burke & Cooper, 2008, p. 65). Peiperl and Jones (2001, pp. 374–375) further suggest that people who engage in overwork lack returns from their employing organization and may thus find themselves stuck in an unreasonable, inequitable working pattern. This necessitates the question of whether individuals working long hours are ultimately classified as being in the state of overwork or not. In this light, Burke and Cooper (2008, p. 65) point out that many individuals confronted with long working hours are indeed overworked; however, this may not apply to all workers. Hence, overwork symptoms may also arise when individuals are not actively working overtime.

Another term arising in this context is overemployment, which represents the state in which an individual, regardless of whether the current level of employment is full-time or part-time, desires to work less, in terms of hours, than he/she does at present. Consequently, when employees are considered overemployed, they perceive an imbalance between preferred working hours and actual working time and are willing to reduce their income at least to a certain degree (Burke & Cooper, 2008, p. 64; Hiemer & Andresen, 2019, pp. 2–3). Hiemer and Andresen (2019, p. 2) suggest that the subjective understanding of overemployment is more heavily weighted than the objective indication of hours worked when studying the phenomenon. Similar to the state of being overworked, research predominantly classifies overemployment as harmful to an employee's psychological and physical well-being and also implies poor job satisfaction (Hiemer & Andresen, 2019, p. 2). Nevertheless, while overemployment is also crucial to consider when discussing the overall issue of overwork, it should be noted that this concept is beyond of the scope of this thesis.

The below-shown figure developed by Burke and Cooper (2008, p. 74) aims to disentangle the most significant terms around the central concept of this thesis, namely, overwork. The point at which individuals find themselves in the state of being overworked may be dependent on job requirements, but also links to their workplace and its prevailing conditions, the organizational culture, incentives geared towards employees, personal preferences, motivations of those concerned, and further similar factors (Burke & Cooper, 2008, p. 75).

While the differentiation between overwork and the concept of workaholism will be established in greater detail in the following subchapter, the demonstrated figure shows that an individual who is considered to be a workaholic cannot be automatically presumed to be overworked or to be working overtime. The same applies to the state of being overemployed, meaning that employees may not ultimately be prone to working long hours when overemployed and may also not suffer overwork symptoms although this holds true for many (Burke & Cooper, 2008, p. 65,74-75). In basic terms, workaholism, the accumulation of overtime and overemployment may lead individuals to be ultimately trapped in the sphere of the overworked employee, according to Burke and Cooper (2008, p. 75), a state which is deemed to be associated with serious risks.

## 2.2. Differentiation of closely related terms and concepts

With these basic explanations in mind, the notion of workaholism needs to be elaborated on in greater detail. Moreover, other terms circulating the topic and their link to overwork are briefly discussed in the following subchapters.

### 2.2.1. Workaholism

The term *workaholism* is widely applied in academic research. Still, there seems to be little consensus about a generally-accepted definition or meaning (Burke, 2006, p. 193; Harpaz & Snir, 2003, p. 291). While several studies have aimed to define the term by combining the most commonly-named characteristics or manifestations, this has proven to be difficult considering its wide-ranging perceptions (Peiperl & Jones, 2001, p. 370). Consequently, as Peiperl and Jones (2001, p. 372) describe it, "the workaholic is to a great extent in the eye of the beholder". Accordingly, the following remarks are to be seen only as an attempt to provide a definition but rather to seek understanding of the term in the context of this thesis.

The notion first appeared through the American professor Wayne E. Oates in 1971, who coined the concept of workaholism, which he described as "the compulsion or the uncontrollable need to work incessantly" (Burke, 2006, pp. 193–194; Oates, 1971, p. 11). As such it is, like the concept of overwork, considered negative by definition. Moreover, scholars seem to equate being in the state of workaholism with other addictions, particularly alcoholism (Burke, 2006, p. 194; Harpaz & Snir, 2003, p. 293). According to Spence and Robbins (1992, p. 160), Oates deliberately altered the word to correspond with the term *alcoholism* when initially coming up with the concept. In explaining his reasoning, Porter (1996, pp. 70–71) states that "whereas an alcoholic neglects other aspects of life for the indulgence in alcohol, the workaholic behaves the same for excessive indulgence in work." Therefore, when viewed from an addiction theory perspective in accordance with the general addiction model,
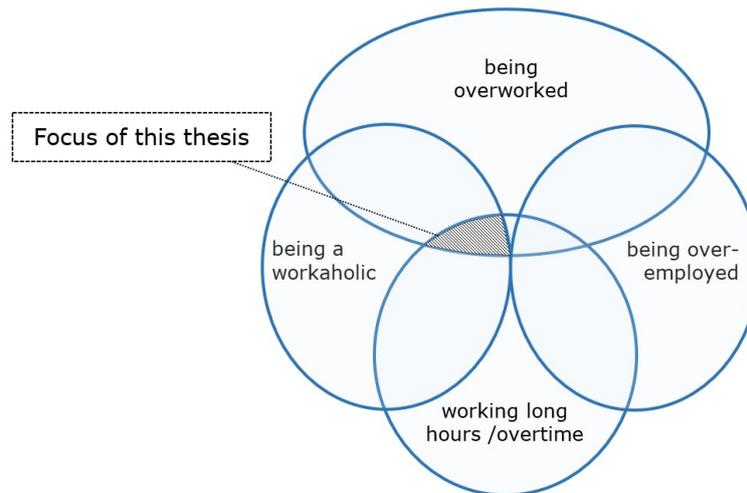
**Figure 1:** Own visualization of related terms, adapted from the original source. (Source: Burke & Cooper, 2008, p.74)

a workaholic can be described as someone who struggles to control the account of work performed, feels compelled to work beyond what is considered usual or required, and is in most cases also confronted with associated negative consequences. Nevertheless, this definition or line of argumentation is debated, as not all scholars have come to the conclusion that workaholism fulfills the criteria to be equated with the dependency on and abuse of substances (Sussman, 2012, pp. 3, 12).

Conversely, workaholic behavior is not discouraged by all scholars researching the phenomenon, as some find it to be favorable and therefore also view and portray it in positive terms. For instance, authors deem workaholism to be an intrinsic desire or the result of one's love for work or also relate it to positively connotated characteristics such as commitment and organizational citizenship (Burke & Cooper, 2008, p. 17; Harpaz & Snir, 2003, pp. 292–294). Moreover, working overtime typically also increases workers' income and the output levels of organizations or economies, although the latter is rather controversial as, e.g., higher accident rates are to be expected at the workplace (Burke & Cooper, 2008, pp. 66–67). Still, individuals with workaholic tendencies are commonly also referred to as "hyper-performers" by several literature streams (Burke & Cooper, 2008, p. 194). In a similar vein, the research found that some individuals categorized as workaholics have nonetheless expressed high satisfaction with their work situation and/or on a personal level (Peiperl & Jones, 2001, p. 372). Finally, authors also recognize the term as both being negatively and positively connotated insofar as they acknowledge the existence of different workaholic types. A widely-empirically studied example of this approach is the so-called workaholic triad, which uses a total of three dimensions to determine the types of workaholics. Regarding this, the first dimension is *work involvement* (that is, high levels of commitment in terms of effort and time), the second is one's *drive to work* (that is, feeling forced to perform work, triggered by internal pressures), and the third is *work*

*enjoyment* (that is, perceiving work activities as enjoyable or fulfilling). This classification ultimately results in three different types: (a) non-enthusiastic workaholics (high scores in involvement and drive, low scores in enjoyment), (b) enthusiastic workaholics (high scores in all dimensions), (c) work enthusiasts (high scores in involvement and enjoyment, low scores in drive).

The literary interpretation of the latter type, namely work enthusiasts, is consistent with the understanding of work engagement, which is discussed in greater detail further in an upcoming section (Burke, 2006, pp. 194–195).

Based on this line of reasoning, the difference between the terms overwork and workaholism emerges as the former is entirely associated with negative connotations within the literature, while workaholism is not. In consideration of this distinction, most literature in the field seems to, however, be devoted to the topic of workaholism in the negative sense and focuses on its detrimental effects (see, e.g., Oates, 1971; Porter, 1996). Hence, one may argue that this stream of literature is captured through the overlap (see figure 1) between being overworked and being a workaholic, as displayed above. Moreover, there also seems to be a lack of research solely referring to or using the standalone term overwork, while considerable attention is devoted to the concept of workaholism in academic literature (Harpaz & Snir, 2003, p. 292). This again makes it extremely challenging, if not impossible, to draw exclusively on studies that use the term overwork. Moreover, the negative form of workaholism and the concept of overwork as described in this thesis only differ very slightly or not at all, depending on the interpretation of the notion – about which there is still no generally accepted consensus (see e.g. Burke, 2006, p. 193; Harpaz & Snir, 2003, p. 292). Therefore, this Master's thesis aims to focus precisely on the mapped-out overlap between these terms, which is marked as the shaded area in figure 1. In brief terms, this marking captures the most unfavorable state of excessive work attitudes resulting from the interplay between

three of the displayed dimensions. While being overworked should always be viewed in negative terms given its serious risks, working long hours cannot necessarily be presumed as dangerous, only when they begin to involve harmful consequences. The same applies to workaholism, which cannot be viewed only in a negative light, as it could emerge as positive work engagement in disguise. Taking all of these previously outlined literature-based definitions into account, this thesis therefore adopts the following working definition for overwork (see, e.g., Burke, 2006, p. 193; Burke & Cooper, 2008, p. 65; Harpaz & Snir, 2003, p. 292; Oates, 1971, p. 11):

> *Overwork is a compulsive work attitude, leading individuals to work at overcapacity. This type of heavy work investment entails risks or harms and is mostly, but not always, associated with long working hours. When viewed in negative terms, workaholism can be used as an interchangeable term for overwork.*

As a result, the terms overwork, excessive or compulsive work tendencies or attitudes, and workaholism (negative), including further slightly altered terms, will be used interchangeably for this paper. For simplicity reasons, workaholism is therefore not used as an umbrella term for both forms (negative and positive) in this Master's thesis. Instead, work engagement (positive) is treated as a separate concept and is explicitly mentioned when it is used as a basis for argumentations.

### 2.2.2. Work or job engagement

This subchapter addresses a concept that is closely related to the one explained above. Work engagement is considered a favorable state or condition and resembles the description of positively connotated workaholics, or so-called work enthusiasts. In other words, job engagement can be understood as a beneficial form of workaholism. Engaged employees experience personal satisfaction and feelings of effectiveness when pursuing their work-related goals and are energetic and confident in doing so (Burke, 2006, pp. 195, 213; Mazzetti et al., 2020, pp. 3–4). Similarly, Schaufeli, Salanova, González-romá, and Bakker (2002, pp. 72–74) describe job engagement as a positive state of mind that is typified by vigor, absorption, and dedication and represents the counterpart to a syndrome of emotional exhaustion, namely burnout. According to the authors, job engagement emerges as a permanent cognitive state, leading individuals to perform their work-related tasks with high levels of mental resilience, willingness, and energy. Such individuals are also characterized by persistence when challenges or difficulties arise, as they associate pride, enthusiasm, and high significance with their work tasks and goals. Similar to the addictive nature of workaholism, engaged employees are also struggling to detach themselves from their job. Unlike workaholics, however, they may immerse themselves fully in their work to come close to what Csikszentmihalyi has described as *flow*, a mental state in which intrinsic delight and well-being take a dominant role (1990, as cited in Schaufeli et al.,

2002, pp. 72–75). Thus, individuals with high levels of job engagement are driven to devote great amounts of time to their work because they truly enjoy doing so. In a direct comparison of the two conditions, it becomes clear that this is essentially not the case for workaholics (Sussman, 2012, p. 2). While both workaholics and engaged employees are susceptible to working long hours, the literature shows that job engagement seems to not be accompanied by such an obsession or compulsion as is characteristic of workaholism. Moreover, besides a positive correlation to an employee's well-being, work engagement also has a favorable effect on performance (Burke, 2006, pp. 195, 197, 213). Research on work engagement has sparked significant attention in recent years, particularly in the fields of organizational and occupational psychology as well as human resource management. This can be reasonably explained by the fact that job engagement does not only have a well-documented positive effect on employee health and well-being but also produces desirable outcomes from the employer's perspective, such as increased work motivation or higher performance levels (Stoeber & Damian, 2016, p. 268). Moreover, engaged employees are generally also inclined to stick with an organization for a longer period of time – thus, also fluctuation rates may be significantly lowered through work engagement (Schaufeli & Bakker, 2004, p. 298).

Therefore, in accordance with Burke's views (2006, p. 195), job or work engagement is viewed as being intrinsically good for those affected in the context of this Master's thesis, while workaholism in broader terms has mostly negative intrinsic effects. This should be taken into account for upcoming sections of this paper.

### 2.2.3. Heavy work investment and work intensification

Heavy work investment (HWI) can be used as an umbrella term for positive or negative forms of excessive work attitudes. Mazzetti et al. (2020, pp. 1–2), for example, agree with the view of those scholars that classify workaholism as entirely negative, while the authors regard work engagement, as described in detail above, as a positive manifestation of HWI. The term is therefore also understood and used as such in the course of this thesis.

In turn, work intensification describes a fundamentally distinct matter and refers to an "increasing amount of effort an employee must invest during the workday" (Bunner, Prem, & Korunka, 2018, p. 2). The phenomenon stems from economic pressures and changes society faces and extrinsically forces those affected to complete a larger amount of tasks at a higher speed or within a shorter time span (Bunner et al., 2018, p. 2; Cheung, Tang, Lim, & Koh, 2018, p. 2). An increasing workload results in the natural consequence that employees accumulate longer working hours in order to perform their assigned tasks timely and adequately. The authors Cheung et al. (2018, p. 2) therefore view heavy work investment as a product of work intensification.

### 2.2.4. Long working hours

While long working hours have been briefly discussed previously to establish the link to the overwork phenomenon, it appears reasonable to address the topic again at this point. Given the fact that managerial careers are at the center of attention for this Master's thesis, the connection some authors establish to such types of professions seems noteworthy. For instance, Burke and Cooper (2008, p. 5) suggest that overtime can be viewed as a prerequisite for attaining managerial or leadership positions. Also Johnson and Lipscomb (2006, p. 923) support this claim and postulate that long working hours are increasingly common among professional and managerial workers and people with higher levels of educational training. While the popular perception is that working time is trending to decrease further, the authors speak of a "time divide, mirroring the social class divide" in this regard. That is, high-ranked managerial positions involve longer working hours, while other lower-level positions generally do not. This again explains why a downward trend in the average amount of working hours per week is still logically justifiable (Johnson & Lipscomb, 2006, p. 923).

Moreover, despite the fact that long working hours have been mentioned on several occasions already, what can be classified as such in the first place remains open. In this respect, however, there seems to be no comprehensive conclusion in academic research. Additionally, average working hours per day or week differ between nations. For instance, in their study, Kivimäki, Jokela, and Nyberg (2015, p. 1743) classified work hours to be abnormal and beyond what should be considered standard hours, at 55 hours per week or more. In Austria, per law, eight hours per day and 40 hours per week are considered standard work hours, whereby the working time may be extended up to 60 hours per week or 12 hours per day (AZG, Section 2 §3 and §5).

However, as already indicated by Burke and Cooper (2008, p. 65), long hours alone, while indeed an important factor, are not the only determiner for individuals to find themselves in the unfavorable state of being overworked. In this sense, one must bear in mind that also the positive form of heavy work investment, namely work engagement, is strongly associated with overtime (Mazzetti, Schaufeli, Guglielmi, & Depolo, 2016, p. 886). This understanding is fundamental to this thesis.

### 2.3. Consequences of overwork

As previously mentioned, workaholic behaviors may result in detrimental effects for those affected, which is where most studies on this phenomenon have devoted their attention (Cheung et al., 2018, p. 2). In fact, they appear to be such an important aspect of the concept as a whole that also, for the definition of the term or the emphasis on the overall relevance of the topic, outcomes are repeatedly addressed in this paper. Hence, although the consequences of overwork are not the focus of the Master's thesis, the most significant outcomes of excessive work attitudes are highlighted again in the following section - not least to address the urgency that this issue necessitates.

Generally speaking, negative outcomes may both arise on an individual level (in nonwork domains) or an organizational level (in the work context). Health-related effects harming the psychological or physical well-being of workaholics themselves appear to be among the most highlighted personal consequences workaholism entails (see, e.g., Burke & Cooper, 2008, pp. 66–67; Endriulaitienė & Morkevičiūtė, 2020, pp. 447–448). More specifically, among many others, health-impairing outcomes include chronic fatigue or stress, emotional exhaustion, sleep disturbance, reduced recovery time, anxiety, a decline in physical and neurocognitive functioning, and low self-esteem. Moreover, overwork may induce burnout syndromes in the longer run (Balducci et al., 2021, p. 8; Burke & Cooper, 2008, pp. 66–67; Mazzetti, Schaufeli, & Guglielmi, 2014, p. 228; Sussman, 2012, p. 4). Galinsky et al. (2005, p. 3) analyzed employees experiencing different levels of overwork (high, medium, low) and found that higher levels of overwork link to more depression symptoms and stress experienced, while highly overworked employees also reported poorer health and tendencies to neglect self-care. Furthermore, as already briefly mentioned in chapter 1.1., the Japanese labor battles the problem of the so-called *karoshi* syndrome – an extremely harmful consequence of overwork - literally translated as "death from overwork". Underlying causes of *karoshi* include suicide, cardiac arrest, heart failure, or strokes. Since these fatal diseases may also be a result of nonwork-related factors, making the syndrome difficult to detect, it can be assumed that official numbers on *karoshi* are substantially lower than they should be (Kanai, 2009, p. 209; Timming, 2020, p. 97). Beyond such detrimental health-related effects, personal consequences also arise as far as social functioning is concerned. In this sense, Sussman (2012, pp. 4–5) summarizes studies on the effects of workaholism, with findings indicating that compulsive work behavior leads to a higher likelihood of conflicts in nonwork domains and also poorer relationships within personal surroundings. Moreover, feelings of frustration or distress are likely to appear once workaholics are forced to detach themselves from their work activities (e.g., when spending time with their family or friends). Thus, overall the personal happiness of those affected may also be impaired, leading to low life and/or career satisfaction (Harpaz & Snir, 2003, p. 292; Sussman, 2012, pp. 4–5).

In addition, effects may also appear in the work context. In contrast to what one might assume, literature links results of overwork on the organizational level generally to poor performance, as workaholics are considered susceptible to higher frequencies of committing errors and hence provoke productivity losses. Similarly, also work-related accidents may increase as a consequence of excessive work (Antosz et al., 2020, p. 1006; Ruhle et al., 2020, p. 344; Sussman, 2012, p. 4). These outcomes strongly relate to potential health-related problems caused by overwork on the personal level, meaning that personal negative effects may spill over to the functioning of an entire organization. In this light, the concept of *presenteeism* appears noteworthy, which describes situations in which individuals attend work although

they are in a poor state of health. Interestingly, the literature suggests that this behavior appears to be widespread across numerous different occupational sectors, while studies indicate that it is especially common among managers (Ruhle et al., 2020, pp. 344, 355). At first, this negative perspective on presenteeism may seem counterintuitive, as organizations may avoid costs associated with the absence of employees at short notice. However, recent studies in the field show the opposite and thereby refer to the above-mentioned effects. At the same time, it should be noted that workaholism and related consequences may also induce *(sickness) absenteeism*, another unfavorable outcome from the perspective of firms. Health incidents may therefore simply interrupt the productive working life of workaholics frequently, which means that organizations may have to deal with an unplanned lack of available staff caused by health-impairing work attitudes (Ruhle et al., 2020, p. 344).

## 2.4. The causes and antecedents of workaholic behavior

With these possible consequences of overwork in mind, the question remains open as to which causes or antecedents underlie workaholic behavior. Does overwork reflect a deliberate choice by those affected, do these behaviors subconsciously develop in the course of managerial careers, or are such tendencies biologically determined? Similarly, another central question arising in this regard is why such an attitude or behavior triggers negative effects resulting in poor employee well-being for some individuals, while others seem to not face unfavorable consequences despite being confronted with similar demands or despite working equally long hours. This chapter seeks to address these questions.

In fact, workaholic behavior may be a consequence of individual characteristics as well as environmental influences, according to several research streams (see, e.g., Mazzetti et al., 2014, p. 227; Sussman, 2012, pp. 8–10). Building on this, the Job Demands-Resources (JD-R) model (Schaufeli & Bakker, 2004) is examined and serves as a core concept and fundamental basis for this chapter, as it covers both spheres at the same time: the externally imposed demands of one's job and the externally provided or individually accessible resources of employees. In line with this, additional causes not specifically mentioned in the JD-R model are discussed, some of which constitute so-called job demands or resources, and can therefore be viewed as subcategories in the JD-R model. More specifically, antecedents emerging on the personal level constituting biological or personality-based influences (see, e.g., Schaufeli, 2016) will be assessed. Moreover, situational factors evolving on the organizational level (see, e.g., Mazzetti et al., 2016) are considered. Relating thereto, the social environment inside and outside the organization is examined, in order to assess the role of interpersonal relationships or influences through social settings. This thesis therefore considers particularly three theoretical perspectives collectively, essentially assuming that workaholism develops through certain personality traits on the one hand, while experiences in the social professional or personal environment and constant behavioral reinforcement provide nur-

turing grounds for workaholism on the other (see, e.g., Ng, Sorensen, & Feldman, 2007, p. 123). Altogether, the upcoming sections therefore attempt to uncover all relevant factors stimulating or favoring the appearance of excessive work attitudes. Nevertheless, one should bear in mind that other related aspects, which may also count as antecedents or causes of workaholism, e.g., demographic or cultural influences, are beyond the scope of this thesis.

### 2.4.1. The Job Demands-Resources model

The subsequent chapter focuses on the Job Demands-Resources model, as originally coined by Schaufeli and Bakker (2004). The model essentially developed out of a growing interest in research to examine the almost exclusively negatively portrayed concept of burnout from a positive perspective, and to establish a closer link to its positive counterpart, namely work engagement (Korunka et al., 2009, p. 243). As part of this Master's thesis, it will be used as the basis explanatory model for the development of excessive work attitudes and their accompanying effects.

The Job Demands-Resources (abbreviated JD-R) model builds on the basic assumption that every occupational setting exerts two types of work characteristics on individuals: job demands and job resources. While *job demands* require effort and skills of physical and/or psychological nature, they are also associated with costs, so that they are often perceived as job stressors. In turn, *job resources* are those aspects linked to a job that assist individuals in achieving their work-related goals, encourage personal growth, and have a diminishing effect on job demands and their cognitive or emotional costs. Such resources can be found on multiple levels – they may originate directly from the organization through factors such as provided opportunities for career advancement or appropriate remuneration. They may also be located at the task level (e.g., autonomy, feedback, skill variety, task significance) or may manifest themselves through work structures (e.g., involvement in decision making, role clarity). Moreover, the authors state that resources may also stem from relationships of individuals to colleagues or coworkers, supervisors, or broader social contexts (Bakker & Demerouti, 2007, pp. 312–313). Building on these two general categories, the JD-R model further assumes that two processes have an inducing effect on job motivation and job strain. First, the health-impairment (or energetic) process, which represents the negative side of job demands (e.g., through heavy workload), may lead to an exhaustion of an individual's resources and even to health-related problems as a result (e.g., burnout). In turn, job resources have intrinsic or extrinsic motivational influences on individuals, fostering the positively connoted work engagement (Bakker & Demerouti, 2007, pp. 313–314; Schaufeli & Bakker, 2004, pp. 297–298).

Table 1, as shown below, provides an overview, summarizing the most significant characteristics of both dimensions.

The full Job-Demand-Resources Model is displayed further below (figure 2). To make sense of this illustration,

**Table 1:** Overview of general job demands and job resource characteristics. Own compilation. (Source: Bakker & Demerouti, 2007, pp.312-313)

| Job Demands (physical, psychological, social, or organizational job features) | Job Resources (physical, psychological, social, or organizational job features) |
| --- | --- |
| - aspects of the job requiring effort or skills<br><br>- associated with costs<br><br>- not negative per se<br><br>- may turn into job stressors (negative, health impairing)<br><br>- examples include high work pressure, emotionally challenging social interactions, high work intensity | - aspects of the job that support achieving goals, and stimulate growth and development<br><br>- reduce job demands and associated costs (positive, health-protecting)<br><br>- may have motivational potential<br><br>- examples include career opportunities, job security, team climate, role clarity, task significance, feedback |

one has to keep the previously mentioned underlying psychological proceedings in mind, which are also referred to as dual processes by the authors. Thus, only when the health-impairing or energetic process prevails, job demands translate into strains and lead employees to be in a state of ill health, with depleted physical and mental resources. In the long run, a breakdown or burnout is likely to result from this (Bakker & Demerouti, 2007, p. 313; Schaufeli & Bakker, 2004, p. 297). These effects therefore resemble the unfavorable state of being overworked in the understanding of this thesis. Mazzetti et al. (2020, p. 13) investigated the role of job demands empirically and found that high job demands are indeed strongly associated with workaholic behavior. In this sense, the authors suggest that workaholism is a dysfunctional strategy to cope with the demand overload experienced by individuals, which leads to a consumption of available psychological resources.

However, when bundled with a sufficient level of resources, job demands may also contain motivational potential, equally to stand-alone job resources. Regardless of how this motivational process may take place, it is ultimately leading to work engagement (Bakker & Demerouti, 2007, pp. 313–314), a fulfilling state of mind which, as already described in more detail in subchapter 2.2.2, has several favorable effects and also leads to positive outcomes on the organizational level (Korunka et al., 2009, p. 244).

In their work, Bakker and Demerouti (2007, pp. 314–317) appear to focus specifically on job resources and their mitigating or buffering effect on the impact job demands may have on individuals. As previously mentioned, the authors refer to several resources which take on the buffering role against job strain and associated health-damaging consequences, such as social support in the workplace. For instance, recognition, appreciation, or support gained by supervisors or leaders may alleviate the perceived stressors

evoked by demands. In a similar way, this positive impact may also result from interactions with colleagues. In addition to that, resources have great value in their own right (Bakker & Demerouti, 2007, pp. 314–317). This proposed buffer effect in the JD-R model and the relationship between job demands, resources, and human well-being has also been empirically investigated by Bakker, Demerouti, and Euwema (2005), with important practical implications observed. Indeed, high job demands combined with low levels of resources available positively influence the occurrence of detrimental effects for an employee, such as exhaustion or burnout - in fact, they do so significantly. More specifically, their study reveals that unfavorable job demands such as work overload, physical and emotional demands did not result in job strain or burnout if specific resources (autonomy, feedback, social support, and positive relationship with supervisors) were present (Bakker et al., 2005, p. 177).

Based on these practical results, a model can be derived that specifically depicts these interaction effects. As displayed in figure 3 below, high levels of job resources in combination with low levels of job demands lead to average job strain and simultaneously trigger high employee motivation. In turn, when resources are low but demands are high, the worst constellation results, namely low motivation and high job strain (Bakker & Demerouti, 2007, p. 320).

The upcoming sections take up this line of arguments but focus specifically on why and how job demands are created or emerge in the first place, an aspect that seems to have been largely neglected in the elaborations of the JD-R model. While Bakker and Demerouti's explanatory approach made it clear that the counteracting job resources are found on the level of the organization, on the task level, within an employee's social surroundings, or internally, emitting motivating and positive effects (Bakker & Demerouti, 2007, pp. 312–313), a more in-depth on the job demands
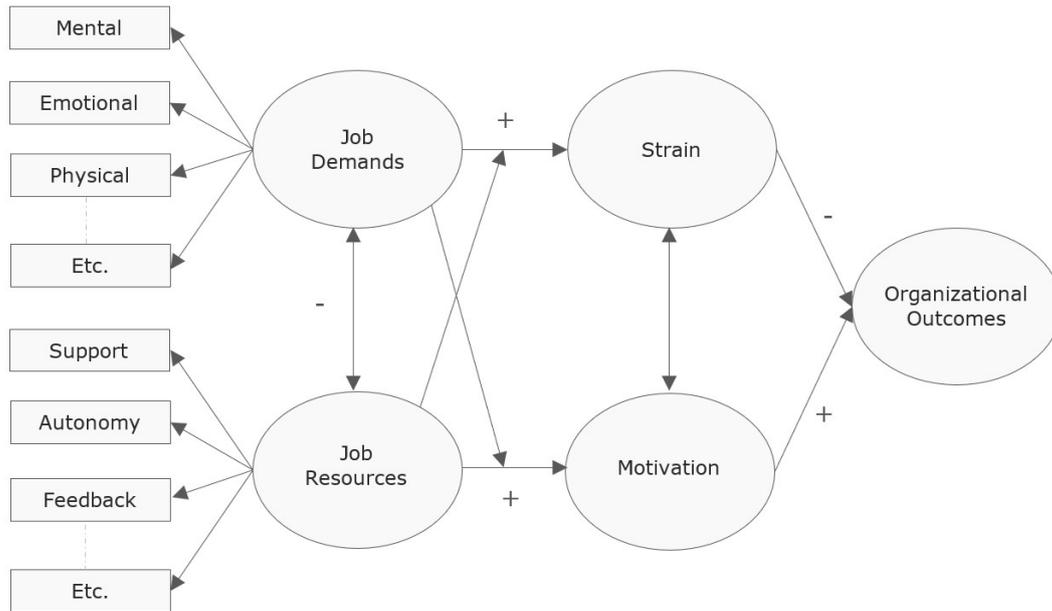
**Figure 2:** Illustration of the full JD-R model. Own compilation. (Source: Bakker & Demerouti, 2007, p.313)



**Figure 3:** Predictions of the Job Demands-Resources model based on interaction effects. Own compilation. (Source: Bakker & Demerouti, 2007, p.320)

side appears reasonable, in order to supplement the model and develop a more integral understanding. Additionally, the following subchapter will take a closer look at how job resources/demands are derived from the unique personality characteristics of employees themselves. Although, according to the model, demands can result in two outcomes (see figure 2), namely strain and motivation, this paper aims to focus primarily on the former. Overall, the theoretical and empirical evidence outlined in the following subchapters can therefore be framed into the Job Demands-Resources model.

### 2.4.2. Situational factors: The role of overwork climates and social settings

Considering situational factors encouraging overwork, such as organizational ethics, workplace practices, specific job demands, or social interactions, represents an important additional explanatory approach for workaholic behaviors. In the attempt to explain inducements stemming from external factors, this chapter takes a closer look at the construct of *overwork climates* as a first step. Then, closely linked to this, further socio-cultural experiences are discussed. In other words, research consents that a prevailing organizational climate itself or interpersonal relationships in different contexts (workplace vs. personal life) may unintentionally act

as enablers for excessive work attitudes (Liang & Chu, 2009, pp. 653–654; Mazzetti et al., 2014, p. 233, 2020, p. 13; Schaufeli, 2016, p. 105).

*Overwork climates*

Scholars generally agree that situational factors emerging in the work context, such as specific practices, requirements, ethics, or expectations, represent an important source for or have a reinforcing impact on workaholic behavior (see, e.g., Liang & Chu, 2009, p. 657; Mazzetti et al., 2016, p. 885). Concepts largely addressed in this regard are an organization's culture and climate (see, e.g., Mazzetti et al., 2020; Schaufeli, 2016). While these two theoretical constructs have several overlapping attributes, they nevertheless differ from each other in significant terms. More precisely, organizational culture is viewed as those shared basic assumptions, core beliefs, and values that characterize a given work environment and are passed on to new members of the organization as the correct way to think or feel through socialization experiences and stories. In contrast, an organizational climate is rather focused on the "shared perceptions of and the meaning attached to procedures, practices and policies employees experience" (Schneider, Ehrhart, & Macey, 2012, p. 362). This implies observed behaviors and expected or actual reactions to actions of others, for example, in the form of rewards or instrumental support (Schneider et al., 2012, p. 362). James et al. (2008, pp. 15–16) describes the construct in simpler terms as "shared psychological meanings" and suggests that an organizational climate comes into existence only as a result of the aggregation of individual organizational members' own perceptions (climates) of a given work setting. In this sense, the sharing component is crucial. Based on this distinction, Mazzetti et al. (2020, p. 234) suggest that a climate manifests on the surface of an organization's culture, essentially making it perceptible for those affected. It is, therefore, not surprising that many studies seem to predominantly center their research on the origins of an overwork climate rather than culture (Mazzetti et al., 2020, 2014; Schaufeli, 2016) since, according to this understanding, experiences are indeed created through the prevailing organizational culture in the first place. However, the ascribed meaning to these experiences only arises through the perceived climate. Based on this reasoning, this paper will thus also focus on this construct.

In basic terms, the so-called *overwork climate* stands in contrast to an *employee growth climate*, whereby the latter fosters healthy development and professional growth among employees, eventually resulting in work engagement. In this regard, parallels can be drawn to the core assumptions of the JD-R model. Thus, while an *employee growth climate* provides sufficient job resources to employees in the first place but also continuously increases them through certain procedures, policies, or organizational practices, the opposite is the case for an *overwork climate*. Instead, it can be assumed that job resources are lacking or necessarily consumed while pressures are high due to challenging job demands exerted

on organizational members. Hence, this is expected to ultimately lead to workaholism (Schaufeli, 2016, pp. 1060–1061). However, how specifically does this construct encourage excessive work attitudes? In what forms may job demands manifest themselves or appear?

Based on the premise that the average perception of specific *overwork climates* may encourage and sustain workaholic behavior within given work settings, Mazzetti et al. (2016, pp. 881–882) developed an Overwork Climate Scale (OWCS) by clustering the core components of such environments based on a literature review. In essence, the authors incorporate two elements of this specific climate in their measuring scale: (1) The joint perception of a work environment that requires beyond what should be viewed as standard and necessary from an objective standpoint (thus, overwork is collectively perceived as a requirement), and (2) the joint perception that overwork does not need to be restricted or rewarded (thus, no compensation for additional efforts). Contributing particularly to the first aspect is the encouragement of compulsive work conduct through so-called *overwork endorsement* within the workplace. Moreover, the second aspect coming into play is *lacking overwork rewards*. The authors use the latter term to describe the absence of rules and policies within the work context, which compensate for excessive work efforts (Mazzetti et al., 2020, p. 13). In this light, organizational members in managing positions, such as leaders, executives, supervisors, or likewise influential characters, have a major impact. This is plausible as they make decisions about policies or regulations that affect the entire organization but also convey their personal expectations concerning specific work attitudes within such climates. Organizational members may therefore adjust their own views and beliefs related to work according to those of their executives or leaders, which essentially means that specific leadership styles may substantially determine the habits and behavior of employees (Endriulaitienė & Morkevičiūtė, 2020, p. 446). If a workforce collectively shares the perception that these implicit organizational norms and values encourage or reinforce excessive work attitudes, a given organizational setting should be viewed as an overwork climate, in which workaholic members are likely to develop.

Closely linked to this are also perceived necessary work efforts for career advancement or personal success within firms in overwork environments. In this light, *overwork climates* are characterized by the joint observation or perception that long working hours or constant availability are considered an imperative to eventually progress up the career ladder (Mazzetti et al., 2014, p. 234). Some authors, such as Liang and Chu (2009, pp. 653–654), for instance, suggest that labeling excessive work attitudes as exceptional commitments has reassuring effects on such behaviors, particularly in combination with recognition or feedback from supervisors or offered career prospects. However, this claim is not fully supported when it comes to describing *overwork climates*. Rather, as briefly mentioned above, the underlying assumption of the construct is the collective perception that specific rewards are lacking (such as, e.g., supportive

feedback, career opportunities, additional financial remuneration) within such environments. This has been confirmed empirically by several scholars (see, e.g., Van Der Hulst & Geurts, 2010, p. 233) and is furthermore consistent with the JD-R model in a sense that such rewards are simultaneously resources a company may provide to its workforce (Mazzetti et al., 2016, p. 881). Therefore, this reasoning also links to the previously established understanding of the buffering effects job resources have on the potential harmful consequences of high job demands. Thus, if such resources are high, high motivation effects occur, whereas job strain is either low or average, depending on the specific influencing job demands (Bakker & Demerouti, 2007, p. 320) (view figure 3 for further clarification). In simpler terms, the conclusion can be drawn that *overwork climates* are collectively perceived as low-reward (low-resources) work settings. Moreover, the role of leaders and their influence on organizational climates is not weighed down with negative connotations entirely. For instance, in the light of the JD-R model, certain leadership styles may play both demanding and resourcing roles in the context of overwork (Endriulaitienė & Morkevičiūtė, 2020, p. 450). Referring to this, Burke (2001, p. 643) suggest that managers can take on assisting roles in supporting employees to change workaholic attitudes, while they may likewise contribute to the establishment of *employee growth climates* within an organization – and thereby stimulate work engagement among organizational members (Mazzetti et al., 2020, p. 14).

On the other hand, *overwork climates* also often incorporate competitive spirits among employees. In order to positively stand out not only through performance but through visible commitment, competitive atmospheres cause individuals to show up especially early and/or to leave their workplace extremely late, which naturally evokes workaholic behaviors, including its consequences in the long run (Ng et al., 2007, p. 125). When such habits are adopted collectively and perceived as implicit norms, this may therefore likewise contribute to *overwork endorsement*, as previously outlined.

*Social settings*

Major explanatory power is attributed to social and cultural experiences not only made within particular organizational settings but also through interpersonal relationships within the personal surroundings of those affected. In essence, these variables seem to positively impact workaholic tendencies through social learning or modeling, or through being educated about appropriate work ethics within certain settings (Mazzetti et al., 2014, p. 233; Sussman, 2012, p. 9). This follows the understanding of various theories of social systems, which postulate that workaholism positively relates to reinforcing encounters made within two distinct systems: family/friends and the workplace (Burke & Cooper, 2008, p. 102). However, as far as organizational overwork inducements through socio-cultural experiences are concerned, one should bear in mind that these aspects closely intermingle with the earlier discussed notion of an *overwork climate*.

Considering personal relationships, a large variety of negative events could possibly contribute to excessive work attitudes. One particularly popular explanatory approach focuses on learning effects through observation, producing mirrored behavior. According to this, workaholics may develop as a result of workaholic family members or other important role models leading by example. Similarly, these arguments may also be applied to the work context – as observed workaholic behavior of certain influential individuals within an organizational environment, for instance, supervisors, colleagues or mentors, triggers effects likewise (Ng et al., 2007, p. 125; Sussman, 2012, p. 9). An additional explanatory approach regards the tendency to work long hours as a partly conscious decision in order to prevent oneself from having to engage in social communities. In this regard, Ng et al. (2007, p. 124) argue that devoting large amounts of time to one's work could be viewed as a socially accepted strategy to avoid spending time with family and friends. Indeed, the literature finds that work-related excuses to avoid participation in a social context are generally considered legitimate (Ng et al., 2007, p. 124). In this respect, Berglas (2004, as cited by Ng et al., 2007, p. 124) stresses that one strong cause for workaholic behavior could be that affected employees experience difficulties having close relationships with others or are simply not willing to establish them. Moreover, from the perspective of family systems theory, workaholic behavior is mainly fostered and encouraged through unhealthy dynamics within family settings (Burke & Cooper, 2008, p. 105). However, such influencing factors are too diverse to be further elaborated on in the context of this thesis. Generally, arguments in this regard seem to mainly focus on individual circumstances beyond the scope of the workplace or on single influences acting as self-imposed references.

Arguably, these factors may exert substantial influence on workaholic attitudes; however, organizational climates fostering overwork, as previously addressed, appear to be of more significance for the purpose of this Master's thesis. This becomes apparent in the attempt to derive recommendations for actions, as one could assume that factors emerging on this level are easier to influence or change. Referring to this, Mazzetti et al. (2020, p. 14), for instance, suggest that efforts should be made to create work environments that discourage workaholic behaviors or compulsive work attitudes by specifically modifying situational factors such as high job demands or the organizational climate, particularly rewards or resources it comprises. Still, research efforts appear to be extremely large when it comes to individual factors, specifically originating from the personality of workaholics. The next section therefore gets to the bottom of this, to find out whether certain individuals are simply more prone than others to develop into workaholics and/or are more likely to suffer from the consequences of being overworked.

### 2.4.3. Individual factors: The role of personality traits, values, and gender differences

Workaholic tendencies are further conditioned by individual factors. One common explanatory approach for this

behavior links to trait theory and essentially assumes that certain personality characteristics act as a predisposition or major source for excessive work attitudes (Mazzetti et al., 2020, p. 2; Schaufeli, 2016, p. 1057). Personality traits are generally defined as stable behavioral or cognitive patterns, which drive individuals toward certain actions (Liang & Chu, 2009, p. 650).

To assess whether heavy work investment is associated with specific traits, scholars often employ the *Big Five personality model*, as developed by McCrae and John (1992). The model essentially captures an individual's personality based on five different dimensions or factors: extraversion, conscientiousness, neuroticism, openness to experience, and agreeableness (McCrae & John, 1992, p. 175). In essence, *extraversion* translates into high levels of assertiveness, ambition, and energy, while *conscientiousness* leads individuals to be persistent and organized. *Neuroticism* goes hand in hand with emotional insecurity or instability, making those affected prone to depression and stress. Lastly, high levels of *openness* describe sensitive, intellectual, curious, or imaginative personalities, and *agreeableness* refers to the dimension leading individuals to be cooperative, caring, and perceived as likable (Schaufeli, 2016, p. 1058). In the attempt to find one generally valid link between workaholism and the mentioned personality traits of the Big Five, Schaufeli (2016, pp. 1059–1060) summarizes the most central findings of studies dedicated to this topic, all of which were conducted between 2006 and 2015. While findings of research seem to vary slightly between the scrutinized research papers, a general observation is that *neuroticism* is positively associated with the negative psychological state of workaholism. In turn, a negative association between this dimension and its positive antipode work engagement becomes visible. The author verifies this relationship also in his own work and additionally finds a (weaker) positive correlation between the two dimensions of *agreeableness* and *extraversion*. On the contrary, work engagement correlates positively with three traits of the Big Five, namely *openness, conscientiousness*, and *agreeableness*. Based on these results, particularly referring to the positive relation between *neuroticism* and workaholism, the undesirable aspects of the phenomenon are once again underpinned when considering the dimension's negatively connotated definition. On top of that, workaholics are found to have an extrovert character, and rather high levels of *agreeableness* seem to prevail – whereas the latter may appear surprising at first glance. However, this personality trait also involves norm conformity originating from desired social approval (Schaufeli, 2016, pp. 1063–1066). In this respect, the author (2016, p. 1066) hypothesizes that since workaholics score high on agreeableness, they are simultaneously more likely to comply with imposed norms or rules, and attach considerable importance to doing so, which may result in heavy work investment in order to satisfy this self-imposed standard.

By contrast, Mazzetti et al. (2020, pp. 3, 10–11) criticize that studies on personality factors are often entirely limited to the Big Five model. In response to this, the authors add to the results of previous research and name *obsessive-compulsive traits*, such as rigidity, superego, and orderliness, as further characteristics that stimulate or drive the development of workaholic behaviors. Such traits are specifically causing the inability of individuals to disengage from their work activities or lead employees to experience a state of anxiety when they do not actively work. In addition, their research indicates that also *perfectionism* and *fear of failure* constitute personality traits that positively correlate with workaholism. These characteristics translate into specific personal beliefs, which often take on an irrational or extreme form. In this light, workaholics impose enormously high standards on themselves and are also overly concerned about how they are judged by others within their social settings. Therefore, those affected are driven to deliver high performance and admirable achievements. With this in mind, the authors highlight a crucial distinction to be made in this context: Workaholic individuals do not overwork out of intrinsic motivation but are rather driven to do so by the urge to apply strategies to counteract their fear of being perceived as a failure. Heavy work investment is therefore triggered and may be viewed as inevitable in certain situations by workaholic employees (Mazzetti et al., 2020, pp. 10–12).

In a similar vein, Ng et al. (2007, p. 123) suggest that especially *achievement-related personality traits* and *work values* act as predispositions for workaholic behavior. Besides an obsessive-compulsive personality, the scholars further state that individuals with Type A personalities, who are believed to be ambition-seeking, achievement-striving and impatient, are prone to develop excessive work attitudes. Similarly, the authors also propose a positive correlation between workaholism, and the trait *need for achievement*. While such personality factors represent noteworthy antecedents, also internalized values and beliefs contribute to such behaviors. Indeed, from an empirical perspective, personality traits and values are closely related constructs, however, there is an important theoretical distinction to be made. Values are not fully genetically conditioned, but also slowly develop through experiences within social settings. Achievement-related values may therefore be partially acquired through socialization processes and also have a stimulating effect on individuals in this regard (Ng et al., 2007, pp. 123–124). Indeed, achievement orientation encourages employees to spend long hours at their workplace and leads them to work beyond what is financially or contractually required, according to Liang and Chu (2009, p. 651). Moreover, another concept that links to workaholism, albeit not only to its negative form, is *narcissism*. Narcissistic personalities comprise the urge to succeed in the professional work context, whereby this links to the strong desire to achieve power over, and admiration by others. In this sense, workaholic behavior may therefore also arise in the attempt to place one's own abilities above those of others, for instance, in direct comparison to colleagues (Falco et al., 2020, pp. 2, 18).

Another essential aspect that should briefly be addressed in this chapter is whether one gender is more likely to develop workaholic tendencies than another or, more importantly, is

more severely affected by the negative impact overwork entails. Interestingly, the separate consideration of these two aspects is crucial, as long working hours do not necessarily translate into the feeling of being overworked and vice versa (Burke & Cooper, 2008, p. 65) (view chapter 2.1). This is also clearly shown through empirical results of studies that look at gender differences. For instance, a study investigating the American workforce (Galinsky et al., 2005, p. 6) shows that men generally work longer hours, show higher accessibility rates outside normal working hours, and are more likely to be occupied in positions associated with job attributes that seem to positively contribute to overwork. However, despite these observations, women are found to be more overworked than male workers. While this may appear rather counterintuitive at first, female employees reported a higher necessity for multi-tasking in their positions, which the authors name as a likely explanation for their findings (Galinsky et al., 2005, p. 6). Earlier research dedicated to gender differences by Burke (2000, p. 10) indicates that similar findings were found in previous studies. For instance, study results show that women tend to devote less time to work-related activities and also do not work overtime hours as frequently but still report higher levels of exhaustion and stress caused by their jobs. Sussman (2012, p. 9) summarizes further findings of studies supporting these claims. Moreover, women can also be associated with higher levels of perfectionism when compared to male employees (Burke, 2000, p. 11). To some extent, gender can therefore be understood as a biological inducement to overwork.

Nevertheless, the discussion on gender differences cannot be entirely reduced to biological factors since also the personal context and related socially imposed norms and expectations are likely to be very different for working men and women. In this light, Cha (2013, p. 158) stresses that prevailing traditional gender roles structurally complicate the possibilities for women, particularly mothers, to work overtime in the first place. While an imposed standard of long working hours seems to be gender-neutral at first glance, it must be considered that family-related obligations or matters generally still limit the time resources of mothers much more significantly than those of fathers. In fact, statistics show that even when women earn higher incomes than their male partners, they spend more time with their children when compared to fathers. In addition, also daily childcare duties and decisions regarding a child's upbringing are tasks still predominantly carried out by mothers despite their increased time spent in the workforce (Cha, 2013, p. 161). Moreover, this problem seems to be firmly anchored in social structures, as challenges persist even when mothers receive sufficient support from the child's father and their careers are steep and successful. Relating thereto, studies show that mothers succeeding in their careers are perceived as less friendly or colder when compared to men with similar circumstances and success. Moreover, women with children are more likely to experience feelings of guilt and psychological stress when they have to prioritize work over family matters, in contrast to the male parent (Cha, 2013, p. 162). In the profes-

sional context, norms and expectations regarding overtime hours therefore commonly imply a lack of opportunities for career advancement or promotions for women, especially in work environments or settings that value considerably high time commitment from their employees. The studied occupational field for this thesis, namely management, appears to presuppose incredibly high norms as far as long working hours are concerned and also penalizes the deviation from this standard, according to several studies (Cha, 2013, pp. 159–160). In this context, links can again be drawn to the theoretical core construct of this work, the JD-R model. Interestingly, the model names opportunities for career advancement and promotion, often lacking especially for women, as resources, which have a buffering effect against the negative consequences of excessive work practices (Bakker & Demerouti, 2007, pp. 312–313). One may therefore assume that the structural absence of such resources has not only a negative effect on employee motivation but also reinforces or at least does not alleviate job strain.

In summary, the previous review of the literature clearly demonstrates that individual factors such as personality traits, values, and gender, promote excessive work attitudes. However, while they do have a reinforcing or contributory character, these dimensions alone do not provide sufficient explanatory power. Instead, it appears to be the interplay between individual personality characteristics and particular inducements existing in organizational environments, such as *overwork climates*, and other social settings, which collectively contribute to the development of overwork behaviors. Overall, these factors can be framed into the outlined Job Demands-Resources model (as demands or resources, respectively) and therefore enrichen the model-based arguments of Bakker and Demerouti (2007).

## 2.5. The glamorization of overwork

As previously mentioned, this thesis aims to shed light on why the romanticizing of heavy work investment occurs. However, research devoted specifically to this aspect, herewith referred to as the glamorization of overwork, seems to be lacking. Nonetheless, overwork is the subject of numerous articles and blog posts apart from scientific or academic spheres, often sparked by discussions on social media platforms such as LinkedIn. In essence, the question raised is why overwork is often normalized or considered a prerequisite for succeeding in a work context and, more importantly, why related consequences are portrayed as "markers of success" or "badges of honor" (see, e.g., Leeson, 2020; Lufkin, 2021).

Of course, also the previously discussed causes of overwork may be closely intertwined with the reasons behind the glamorization of overwork. In other words, specific *overwork climates*, likely leading to the adoption of certain work-related values, attitudes, or behavior, as well as interpersonal relationships in social settings in the work context or non-work domain, can likewise be assumed to not only stand as a cause for the development of workaholics but also encourage

individuals to glamorize such behavior. The same is applicable to particular personality traits or characteristics closely related to workaholism, as discussed in chapter 2.3.

Beyond these discussed aspects, however, this Master's thesis aims to establish novel explanatory approaches as far as the glamorization of excessive work behaviors is concerned. For this purpose, two specific research areas will be considered: work engagement and the concept of the *triumph of emptiness*. While contradictory forms of heavy work investment exist, most of which manifest themselves negatively, there is a growing interest in research to study the concept of work engagement, a positively connotated work attitude, likewise causing individuals to devote significant effort and time to their work (Korunka et al., 2009, p. 244; Mazzetti et al., 2020, p. 11). The more precise investigation of this phenomenon and its distinction to unhealthy work practices appears relevant for this Master's thesis, as an outside perspective may assume that heavy work investment from engaged employees may be wrongly perceived as the glamorization of overwork, particularly when prevailing job resources needed to cope with high job demands are not taken into consideration. The fundamental ideas of Alvesson's (2013) *triumph of emptiness* are closely examined to address the question of why glamorization may occur, meaning the act of exaggerating positive connotations with one's detrimental work attitudes in this specific case. This is therefore very different from the reasoning behind the first theoretical explanatory approach, work engagement, which essentially assumes that glamorization occurs because overwork does not affect the individual in a negative sense. Instead, in the context of this Master's thesis, the elaboration of Alvesson's concepts (2013) is built on the assumption that behavior inside and outside of the workplace is wrongly presented in a positive light although it actually entails negative effects.

2.5.1. Using work engagement as an explanatory approach

In a first attempt to explain the glamorization of overwork, the notion of work engagement is considered. As already set out in Chapter 2.2.2, for the purpose of clearly distinguishing the term from its negatively connotated counterpart, this means that engaged employees are considered to be in a positive, energetic work-related state of mind, which relates to high levels of dedication, absorption, and vigor. In this sense, they appear to be enthusiastic about their jobs and proud of their positions and occupational activities (Burke, 2006, p. 195; Mazzetti et al., 2020, pp. 1–2). Schaufeli et al. (2002, p. 74) describes the term work engagement as the reverse phenomenon of burnout, where the latter is described to be strongly related to low levels of activation (thus, exhaustion) and low identification (thus, cynicism). The opposite is the case for engaged individuals.

It is important to bear in mind that work engagement also manifests itself through long working hours or overtime. One of the three dimensions of the construct is representative of this, namely absorption (Korunka et al., 2009, p. 244). This means that engaged employees are typically extremely fo-

cused on their tasks and often seem to immerse themselves so deeply in their projects that they lose track of the actual time spent at work. What is profoundly different in comparison to the negative aspects of workaholism is, however, that health-impairing effects do not exist for work engagement, and also the motivation behind this work behavior is not the same. Moreover, equally to workaholics, literature agrees that engaged employees also tend to experience trouble in mentally detaching themselves from their work-related activities. Whereas workaholics are obsessed and compulsive and generally do not perceive their high job involvement in positive terms, engaged employees are characterized by enjoyment and passion for their jobs (Burke, 2006, pp. 197–200; Korunka et al., 2009, p. 244; Sussman, 2012, p. 2).

Thus, based on this general understanding of work engagement, its glamorization seems obvious. Since it is a positive phenomenon, which even evokes pride in individuals, one may therefore argue that engaged workers are consequently entitled to glamorize it, as literature also presents it as a behavior that can be applauded. Moreover, another assumption in this context relates to social settings, specifically related to the fact that literature agrees that excessive work, in terms of overtime or long hours, may also occur under the guise of work engagement. As already mentioned in previous sections, workaholic behavior can affect social relationships negatively, partially due to constant absences when it comes to social gatherings, e.g., among family and friends (Sussman, 2012, pp. 4–5). Arguably, the same could apply to engaged employees. The consequence of this could ultimately be that work engagement is not perceived as positive or applaudable in such social environments but instead becomes primarily apparent through subjective side effects, such as an increased absence of those concerned. If an engaged worker nevertheless portrays his/her work behavior in positive terms, it may be mistakenly confused with the glamorization of overwork.

Assumptions in this regard could similarly be applied to co-workers. For instance, Korunka et al. (2009, p. 244) stresses that engaged employees are provided with sufficient resources to not only deal with job demands but also to personally develop and grow. Such demands and resources, as also intensively discussed earlier on, are mostly person-related, such as high levels of task significance or feedback (= resources) or high perceived work pressures or challenging tasks (= demands) (Bakker & Demerouti, 2007, pp. 312–313). Therefore, it also seems plausible that these individual aspects are not known by each and every co-worker. At the same time, it was previously outlined that the behavior of organizational members, especially of those who are viewed as role models or who work in high-ranking positions, e.g., executives or supervisors, is often imitated or mirrored by others. Relating to this, the difference between negative forms of heavy work investment and work engagement might not be fully understood by colleagues, especially if individual job resources are not known or considered. Thus, one could argue that also in the work context, the glamorization of work engagement may be confused with that of overwork, only if the

tendency to work excessively but not the available demand-resource balance for such employees is judged. If this is the case, one may further argue that workaholic tendencies could possibly also develop as a result of the observation of engaged workers, when their excessive work behavior is misinterpreted.

Overall, these assumed relationships can be summarized as follows: from an external perspective, one could wrongly assume, both in personal and professional spheres, that work engagement actually represents overwork. Due to observed long working hours, significant amounts of overtime, and the failure to fully detach oneself from work – all of which are elements associated with both positive and negative forms of heavy work investment – one could come to this conclusion. While the glamorization of work engagement is not negative per se, it could trigger negative effects when it is mistaken for overwork. Thus, if such confusions occur, the wrong construct is perceived as being portrayed in a positive light, such as workaholism in negative terms.

### 2.5.2. Linking glamorization to the triumph of emptiness

Linking the glamorization of overwork to the concept of the *triumph of emptiness* (Alvesson, 2013) represents the second attempt to explain underlying reasons for falsely portraying unhealthy work behavior as usual behavior, normal efforts or indicators for success to the outside world. Using the ideas behind this theoretical concept, this chapter aims to solve the question of why individuals would possibly glamorize workaholic behavior, given the damaging effects they may cause on themselves and their surroundings. In very basic terms, Alvesson refers to three contemporary elements, namely *grandiosity*, *illusion tricks*, and *zero-sum games*, characterizing the advanced modern society we live in today, according to the author. These manifestations can be viewed independently from each other but simultaneously as trends in contemporary development that continuously reinforce each other (Alvesson, 2013, p. 21).

With *grandiosity* being the central condition or phenomenon, he argues that individuals constantly put in the effort to add attractiveness to occurrences related to them in order to improve their own self-esteem and perceived status, while no actual substance, quality, or viability is truly behind this. In doing so, they strongly focus on their visuals, jargon, and presentation in mass media. Alvesson argues that the underlying reasons for this urge to achieve *grandiosity* lie in the advanced society itself. Hence, it can be understood as a collective phenomenon. Amplifying effects originate therefore also from organizations and professional institutions in occupational sectors. Essentially, our modern society is typified by an accumulation of processes, structures, or mechanisms, all of which strongly foster *grandiosity* (Alvesson, 2013, pp. 1–15, 21). Related to this central understanding, *zero-sum games* emerge as a second manifestation. The construct basically refers to the assumption that benefits are always gained at the disadvantage of others. Therefore, also competition comes into play, as perceived personal satisfaction is deeply intermingled with that of other individuals. This again means

that success is primarily recognized as such when it appears to be superior in relation to the achievements of others. To illustrate his reasoning behind this manifestation, Alvesson (2013, p. 4) gives an example related to car ownership: driving an old, valueless vehicle does not constitute a significant problem for most individuals, unless the surrounding majority of the population makes the transition to modern, luxury cars. In most cases, aside from the small minority which enjoys deviating from the new normality, those individuals driving through such surroundings in their old cars generally feel dissatisfied with their own circumstances in this regard (Alvesson, 2013, pp. 4–5). Finally, *illusion tricks* represent a third core manifestation, which represents the increasing interest in conveying positive impressions or imagery. Indeed, this construct is closely interconnected with *grandiosity* as both manifestations seek to present events or circumstances in a positive or glamorous light. The difference between these two is, however, that *grandiosity* basically refers to general attempts to portray certain elements or occurrences as greater than what they actually are (within a reasonable framework). *Illusion tricks*, on the other hand, essentially establish misleading or false relationships to certain behaviors or competencies. In doing so, they do not necessarily anticipate strong connotations with success or attractiveness. Instead, they may simply produce delusive effects in order to fulfill certain expectations or to comply with social norms. For instance, companies could use *illusion tricks* to falsely inflate the perceived competencies of employees by changing their job descriptions or titles, while the work tasks they perform remain largely unchanged. Moreover, what appears particularly striking in this context is that individuals who employ such illusionary practices do not only deceive others but also engage in self-deception (Alvesson, 2013, p. 18).

In essence, the *triumph of emptiness* is therefore considered a core component in today's society and results from the interplay between the described manifestations. According to the author, most organizations employ or include each of the described constructs in organizational structures, causing such behavior to intensify further. As a result, a vicious cycle takes shape, giving rise to the increasing emphasis of insubstantial branding and self-personifications over substantive concerns. Thus, behind these seemingly remarkable facades, deceptive maneuvers hide, which conceal, according to Alvesson, the *triumph of emptiness* (Alvesson, 2013, pp. 2–3, 224–225).

Now that the basic assumptions behind Alvesson's construct are mapped out, this Master's thesis aims to establish a link to overwork and its glamorization. At this point, it is again crucial to emphasize that one should bear in mind that the presented arguments are novel theoretical links, none of which have essentially been established by Alvesson himself, at least not in this specific form. Therefore, the following section is based on conjectures drawn from the linkage between earlier-debated literature-built arguments and central elements of the *triumph of emptiness*.

In the attempt to achieve *grandiosity*, workaholics may seek to give their own brand, meaning themselves in a busi-

ness context, status-enhancing images, regardless of the negative consequences they might experience as a result of their work behavior. According to Alvesson (2013, pp. 8–9), in aiming toward *grandiosity*, individuals do not go beyond what appears reasonable or strive toward completely delusionary undertakings. Instead, *grandiosity* is somewhat socially legitimatized or embraced and may therefore appear in disguise without being obviously misleading. In this sense, also excessive work and overtime are generally rather viewed as a legitimate activity, although this naturally lies in the eye of the beholder. For example, if workaholics do not participate in social life, society commonly views work-related absence as a reasonable excuse (Ng et al., 2007, p. 124). Taking this as a starting point, one may therefore argue that the glamorization of overwork through *grandiosity* is essentially not restricted or constrained but on the contrary, considered to be legitimate.

Moreover, another link can be established to Alvesson's understanding of the advanced society as a whole – in which the concept of *the triumph of emptiness* supposedly flourishes. Similarly, chapter 2.3.2 gave theoretical insights arguing that interpersonal relationships in social settings may influence the development of excessive work attitudes. Comparably to this, Alvesson (2013, p. 4) describes that in the context of *zero-sum games*, success and what is generally perceived as desirable for an individual is measured in relation to the achievements of others (hence, the collectivity). Based on this reasoning, one may assume that workaholics align not only their work behavior with the behavior of others but that such learning or mirroring effects may also be applicable when it comes to the glamorization of workaholic tendencies. In other words, the social settings employees are exposed to appear to be incredibly significant. In this context, Alvesson (2013, pp. 1, 28, 199) also mentions that in professional spheres, people constantly try to impress and ensure to be recognized as competent and successful by others, which is further intensified in competitive environments. As an example of this, he names boosted CVs, commonly equipped with numerous *illusion tricks* such as inflated job titles or grades. In this regard, one could continue the train of thought one step further and consider the role of online social networks. However, the influence of social media networks in this regard must be clarified by means of empirical research.

On a further note, parallels can also be drawn to certain consequences and antecedents of excessive work attitudes recognized by literature, as already discussed in previous chapters. Interestingly, *grandiosity* is associated with high levels of narcissism and the longing to improve one's self-worth or self-esteem (Alvesson, 2013, pp. 8–9). On the one hand, low self-esteem is acknowledged as an effect workaholism may entail (Sussman, 2012, p. 10), whereas, on the other hand, studies also find that narcissism is positively associated with workaholism and its positive antipode work engagement (Falco et al., 2020, p. 18). One may therefore argue that one possible explanation for the *glamorization of overwork* is that individuals with higher levels of narcissism are not only prone to engage in workaholic behavior but to

also portray it in positive terms in order to gain more confidence about themselves.

Summing up, using Alvesson's theoretical constructs, this chapter attempts to explain why overwork is publicly misrepresented as such that does not link to negative effects. However, it remains questionable whether the considerations and assumptions put forward in connection with *grandiosity, zero-sum games,* and *illusion tricks* are truly manifested in practice. Clarifying this is therefore one objective of the empirical research conducted for this Master's thesis.

## 3. Methodology

In addition to the illustrated theoretical perspectives this paper scrutinizes, the findings of this thesis will be enhanced with empirical research. This is considered crucial in order to assess whether theoretical findings can also be applied to the chosen subject sample and, overall, to accurately investigate perceptions of individuals in the pursuit of managerial careers.

Thereby, it is the aim of the empirical research to provide evidence of the causes of overwork and potential triggers for the glamorization of heavy work investment toward others. As theoretical developments on the origins or antecedents of workaholic behavior are still lacking (Burke & Cooper, 2008, p. 61; Douglas & Morris, 2006, p. 394), particularly in specific areas such as the socio-cultural context of those concerned (Mazzetti et al., 2020, p. 13), a closer investigation appears much needed. Moreover, the research interest in the glamorization of such overwork behaviors remains virtually unaddressed in the present literature, making theoretical contributions here particularly valuable.

On the basis of the stated research question (see chapter 1.2) and theoretical considerations, the following subchapters justify and outline the applied research design for the empirical approach of this Master's thesis in the following subchapter. Next, the data collection process is presented in section 3.2, and the sampling method and research context are described in 3.3. This includes a brief description of the interview guideline and also sheds light on the overall procedure, communication with potential interview partners, and the subsequent transcription. Finally, the analysis of data, according to Kuckartz (2018), is explained in detail in 3.4, while the proceeding is reflected with regard to quality criteria in subchapter 3.5.

### 3.1. Research design

The outline of the chosen research design for this Master's thesis is viewed as critical, as it helps to plan essential steps, allocate relevant resources throughout the course of the study and finally, also legitimize the overall research process (Przyborski & Wohlrab-Sahr, 2019, p. 106). In very basic terms, different methods of empirical research – whether they are of qualitative or quantitative nature - encompass the methodological guidelines used to establish links between existing theoretical literature and collected data, and further

guide the analytical process. Considering this, it becomes apparent that decisions on the appropriate research technique cannot be detached from the elaborated theory-based information demands (Baur & Blasius, 2019, pp. 1–3).

A qualitative approach will be used for this Master's thesis, in consideration of its basic theoretical frameworks, proposed research question, and the variety of methods available for empirical investigations. Qualitative research aims to achieve in-depth interpretations of specific subjects by taking their individual perspectives and personal attitudes, views, experiences and/or perceptions into account (Albers, Klapper, Konradt, Walter, & Wolf, 2009, p. 6; Aspers & Corte, 2019, pp. 146–147). In contrast to this, quantitative techniques would not produce desired or meaningful results for the present study, not least because they center on measurements, quantities, and numerical values and are thereby primarily concerned with the testing of predefined hypotheses within large, representative samples (Albers et al., 2009, pp. 6–7). As this Master's thesis seeks to understand different causes of excessive work behaviors, the underlying reasons and motives linked to specific work-related attitudes, and the impact such behaviors may have within different social settings; a qualitative approach best suits this exploration.

While the qualitative spectrum of methods is broad and offers wide-ranging possibilities as far as the data collection is concerned, this Master's thesis will use open interviews (see, e.g., Baur & Blasius, 2019, p. 15) as a suitable qualitative approach, as interviews will allow a "deep dive" into motivations and perceptions of overwork. The following chapter will explore the collection of data in greater detail.

### 3.2. Collection of data

This subchapter briefly explains how valid and reliable data was collected. Referring to the stated research question, the antecedents or causes for overwork potentially triggering its glamorization in the longer run, were empirically explored with qualitative, semi-structured interviews, using a prepared interview guide in order to steer the conversation in the desired direction. This form of conducting an interview enables a structured proceeding and therefore allows the interviewer to tackle all relevant topics (Helfferich, 2019, pp. 669, 675). In this context, a mixture of open questions and narrative-requesting techniques were used although the interviewer addressed further aspects flexibly, depending on the respective course of the conversation. This proceeding therefore contrasts with other more open and spontaneous qualitative interview techniques, such as, for example, narrative, monologic interviews or ethnographic interviews, both of which typically work without a guideline (Helfferich, 2019, p. 671). Generally speaking, arguments favoring and opposing more rigid structuring of an interview situation exist. For instance, Helfferich (2019, p. 676) recommends avoiding triggering the subject repeating the posed question as this could strongly limit the respondents' subjective perception. On the other hand, she also emphasizes that a given structure ensures content relevance throughout the

conversation, which may facilitate the comparability of results in the data analysis process.

The interview guideline developed for this Master's thesis consisted of three separate content blocks, with a total of 17 core questions. Before shifting to the discussion of them, the guideline provided a declaration of consent. Moreover, socio-demographic characteristics were recorded. The latter is not included in the transcripts, as this type of personal data was treated confidential and only documented as potential indices for data interpretation purposes. The first content module was essentially aimed at attuning the interviewees to their daily experienced work setting and environment. This was achieved through narrative-prompting questions related to their current job situation. Following the Job Demands-Resources model (Bakker & Demerouti, 2007), the second content block then explored prevailing job demands and resources impacting respondents, and further scrutinized, whether the working environments of the interviewees bear a resemblance to so-called *overwork climates,* as coined by Mazzetti et al. (2016). The last section of the interview guideline identified perceptions regarding the glamorization of overwork in both the private and professional work contexts of respondents. The full guideline, including all posed questions, can be found in the appendix B.

### 3.3. Sampling and research context

This subchapter briefly explains how the choice of suitable interview partners took place within a given research context and in what way the sample was accessed. Given the aims of this study, convenience sampling was used for this paper. Nevertheless, the sample was based on a criterion-guided pre-selection strategy since considerations had to be made as to who could serve as a starting point for the empirical research. In this sense, the selection of the sample based on socio-demographic characteristics was deemed appropriate (see, e.g., Albers et al., 2009, p. 321), with the level of education and actual or intended economic professional orientation displaying the most important criteria.

Therefore, the following aspects were predefined as general requirements and applied to the sample: All respondents have obtained at least a Bachelor's degree in business or related fields. As far as their working activity is concerned, respondents were either occupied as full-time employees in managerial careers (min. 38,5h/week by contract) or – in the case that they were still actively enrolled in an academic study, such as a Master's program geared towards management, devoted at least 25h/week (by contract) to their job. Although it was not the focus of the empirical investigation to analyze variations between different socio-demographic groups, a balance concerning gender and career stage (full-time employees vs. working students) was nevertheless intentionally achieved. The primary pre-selection criterion, however, was the respondent's personal perception of his/her own overwork tendencies and the presence of at least some sort of workaholic behavior. This was determined prior to the interviews, as described in more detail further below, by

a preliminary analysis using a scale for workaholism (Schneider & Bühler, 2004).

The study took place in Vienna, Austria. Between February and March 2022, a total of 10 semi-structured interviews were conducted - mostly virtually via Microsoft Teams as a result of the COVID-pandemic. The interview duration was between 47 and 65 minutes. All interviews were conducted in German (the native language of the interviewer and all interviewees), were recorded and transcribed verbatim, directly with the software MAXQDA, but altered into grammatically correct standard German. Dialects and punctuations were thereby adjusted accordingly, while longer pauses for reflection were included as such. This study thereby closely followed instructions and transcription rules suggested by Rädiker and Kuckartz (2019, pp. 1–4). The sample included five women and five men, with an average age of 32.3 years. As for the professional activity of respondents, six interviewees were classified as full-time employees in managerial careers and four as working students. Therefore, all respondents matched the defined pre-requirements and were actively employed in Austria. At this point, it can be noted that the actual working hours of interviewees, for the most part, substantially exceeded the given number in the pre-requirements of this study.

In order to recruit a sufficient number of interview partners, the convenience sampling method called snowball sampling (Aspers & Corte, 2019, pp. 320–321; Naderifar, Goli, & Ghaljaei, 2017, p. 2) was applied. As workaholics are largely in denial of their problematic work patterns (Cooper, 2016, p. 109) and are objectively unable to judge their own behavioral tendencies as excessive (Peiperl & Jones, 2001, p. 375), this constitutes a major obstacle in finding interview partners who face overwork themselves. Therefore, snowball sampling appeared particularly suitable, as the method is usually used when difficulties in accessing samples with target characteristics arise. The general idea of the technique is that the researcher asks those interview partners who are readily available to him/her whether they can name any other potentially suitable respondents with similar views on the topic, making the sample grow like a snowball rolling down the hill. Especially in the face of sensitive topics such as the one for this Master's thesis, where the identities of interview partners should remain anonymous, this networking approach is believed to be effective (Naderifar et al., 2017, p. 2). Starting from the researcher's own professional network, individuals who stood out due to their particularly high work commitment or overtime hours were carefully approached, and potential interviewees were then recruited from the network's acquaintances. This process continued until data saturation set in Naderifar et al. (2017, p. 2). As far as this is concerned, one should note that rather small sample sizes are typically sufficient in qualitative research. Since the research object for this Master's thesis required a detailed, in-depth analysis of the subject area, the total number of 10 conducted interviews was found to be adequate, as further qualitative questioning would have resulted in redundant information (Akremi, 2019, p. 325).

Once potential interview partners were available, a scale for detecting workaholism was used to determine prior to potential interviews whether the need to work ceaselessly was present. The used scale, which took respondents a total of about 8 minutes to complete, enabled a straightforward recording of overwork tendencies. It records workaholism by using 20 dichotomous items with labels, whereas respondents choose between "does not apply" (score of 0) and "applies" (score of 1). The employed approach can be described as follows: All potential interviewees received the scale and precise instructions via email and were asked to return it within approximately one week. Following this, the Master's student analyzed the returned scales instantly and decided on the basis of a cut-off score (10) whether the contacted persons were eligible for an interview or not. The degree of workaholic tendencies of an individual was quantified by simply adding up the affirmative responses (Schneider & Bühler, 2004, pp. 1–6). The sent-out questionnaire can be found in the appendix A. Subsequently, all contacted people were informed on whether or not they were suitable to be interviewed, meeting date proposals were made, and further conditions (e.g., online/in-person) were clarified. Table 2 below shows an overview of all respondents included in the sample.

### 3.4. Analysis of data

After all interviews had been successfully conducted and transcribed, the data were analyzed with the computer-assisted software MAXQDA. Out of the large variety of data analysis techniques available in research practice, the content-structuring qualitative content analysis, according to Kuckartz (2018), was deemed to be the most suitable method for this thesis. Particularly with regard to category development, this technique allows more scope and flexibility in working with both deductive and inductive codes - thus, categories that are applied to the primary empirical data based on theoretical insights, as well as categories that are derived directly from the transcript data itself (Kuckartz, 2018, pp. 97–98; Rädiker & Kuckartz, 2019, p. 95).

The procedure of the content-structuring content analysis, according to Kuckartz (2018, pp. 100–121), is divided into seven separate stages, which the author presents as a spiral-shaped scheme, as shown below in figure 4. All of the steps included in this technique and described below were closely followed for the analysis of the data material for this Master's thesis, using MAXQDA.

In the first step (initiating text work), Kuckartz (2018, pp. 100–101) recommends familiarizing oneself with the data material and writing first brief summaries and memos. In the course of the second phase, data is analyzed by means of thematic core categories (or codes), which are already deductively applied to the available data. As suggested by the author, these core codes stem from the interview guideline used for this study, which itself is derived from the overall research aim and theoretical frame of reference (Kuckartz, 2018, p. 97). In this light, Rädiker and Kuckartz (2019, p. 101) stress that the meaning and relevance of single categories should be

**Table 2:** List of all interviewees including their characteristics. Own compilation.

| No. | Gender | Age range | Status | Industry | Link to Management |
|-----|--------|-----------|--------|----------|--------------------|
| List of interviewees | | | | | |
| 1 | female | 20-25 | working student | telecommunication | *enrolled:* MSc (Management) *job role:* Strategic Management Intern |
| 2 | male | 26-30 | full-time | telecommunication (previous consulting) | *degree:* MSc (SIMC) *job role:* Transformation Management |
| 3 | male | 30-35 | full-time | Startup/IT | *job role:* Management position (Startup) |
| 4 | male | 26-30 | working student | consulting | *enrolled:* MSc (Management) *job role:* Consulting Intern |
| 5 | male | 50-55 | full-time | IT | *degree:* PHD (Business Administration) *job role:* Senior Director Sales |
| 6 | female | 20-25 | full-time | Startup | *degree:* BA (International Management) *job role:* Management position (Startup) |
| 7 | female | 26-30 | full-time | telecommunication (previously Consulting) | *degree:* MSc (CEMS) *job role:* Transformation and Strategy Management |
| 8 | female | 20-25 | full-time/working student | technical industry | *degree:* BA (International Management) *job role:* Process Management |
| 9 | female | 26-30 | working student | banking | *enrolled:* MSc (Management) *job role:* HR Management Intern |
| 10 | male | 50-55 | full-time | technical industry | *job role:* Key Account Manager |
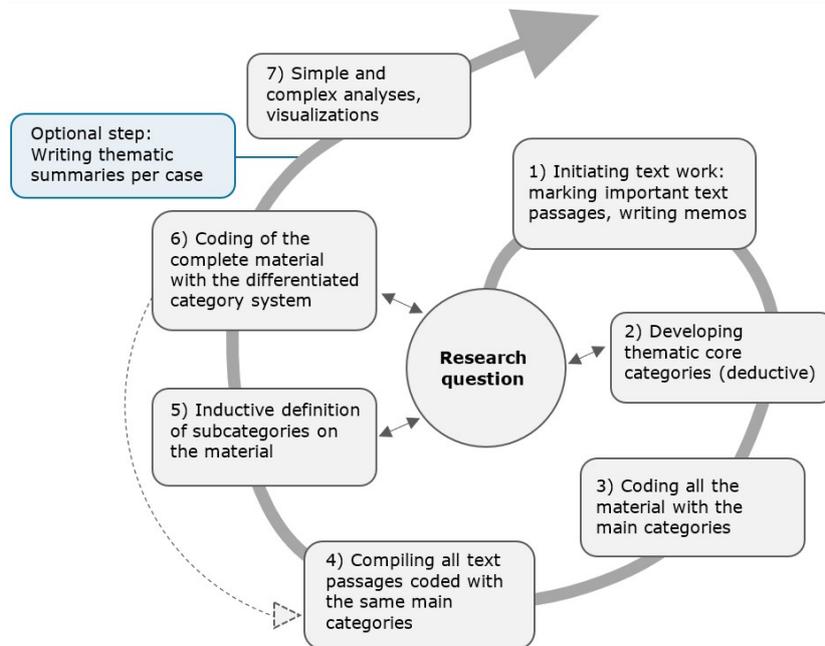


**Figure 4:** Process flow chart of a content-structuring content analysis. Own compilation. (Source: Kuckartz, 2018, S.100)

recorded as precisely as possible when the code is being developed and further clarified with more details in the course of the analysis. This was achieved by means of category definitions (equivalent to so-called code-memos in MAXQDA) and were used as a reference for the entire coding process. The third step of the analysis method then initiates the actual coding process. In this context, the entire material undergoes another detailed, sequential screening process, and individual, content-relevant text passages are assigned to the main categories (as defined in the previous step). Relating thereto, it cannot be ruled out that individual text passages are attributed to more than one code, as they may thematically apply to several.

Steps 4 to 5 closely interconnect to one another. After the first coding process, all main categories were fully differentiated and consolidated further, as far as feasible. In the course of this (see step 5), new subcategories that emerged from the data material were inductively added, in addition to existing deductive subcategories. Following this procedure, these codes were again reviewed, further abstracted if necessary, and assigned with category definitions (memos). Thus, these six stages resulted in the deductive-inductive category system for this Master's thesis. Finally, the entire category system and data material were reviewed once more in order to ensure that the degree of differentiation was sufficient and precise enough and that all code definitions appeared clear and reasonable, and adjusted accordingly when necessary (Kuckartz, 2018, pp. 101–111). As also claimed by Kuckartz (2018, pp. 110–111), particularly steps 5 to 6 represented the most time-consuming part of the analysis for this thesis, since a systematic, repeated run-through of the entire data material was required – that is, of all ten interview transcripts.

The thematic main categories used in the coding process for this study are shown in table 3 below. The complete category system developed and applied for the analysis of this thesis, including both the deductive thematic core categories and the mostly inductively developed subcategories, are attached to the appendix D.

After the finalized category system was available and the coding phase thus completed, the optional but recommended step of writing case-related thematic summaries was initiated (see blue step). Relating to this, the summary grid/summary tables function in MAXQDA was used, which overall simplified the subsequent category-based analysis of all codes. Nevertheless, it is important to point out that all thematic summaries per case were rooted in original quotes, and the process of writing them did not allow room for interpretation (Kuckartz, 2018, pp. 111–117).

### 3.5. Quality criteria

The classical quality criteria of qualitative research, which ultimately ensure that empirical work attains sufficient significance and is considered trustworthy, are objectivity, reliability, and validity (Flick, 2019, p. 474). The empirical study for this Master's thesis also lives up to the standards of these criteria although one has to bear in mind that

qualitative research, in contrast to quantitative data, cannot achieve generalizability or representativeness of the results for a given population (Albers et al., 2009, p. 7). Accordingly, also the meaning of these so-called quality criteria differs significantly within the qualitative and quantitative research spheres and poses obstacles especially for qualitative research, as it remains controversial in literature what exactly constitutes their fulfillment (Flick, 2019, pp. 474–475).

Moreover, the transparency and verifiability of the empirical research conducted for this thesis are ensured through this chapter on the methodology on the one hand, which intends to reflect the entire proceeding and executed stages. On the other hand, the validity and quality of this Master's thesis are also ensured through the project documentation. This involves all documents included in the appendix (A-D) of this thesis, as well as the complete project file in MAXQDA, including audio files, transcripts, and visible coding steps.

### 4. Findings

This section presents the findings of the empirical study. Starting with perceived job demands and resources within the interviewee's current work settings, all categories as well as their subcategories will be elaborated in detail. Verbatim quotes (translated from German) regarded as specifically relevant to accurately reflect the findings, will be included to document observations further.

The data structure of the results, visualized in a very simplified form, is shown in figure 5 below.

As far as the data structure is concerned, categories 2-6 include evidence valuable for answering research subquestion 1. In other words, these categories shed light on individual variables, situational factors, and relationship dynamics stimulating or favoring excessive work attitudes. At the same time, these aspects (C2-C6) may simultaneously contribute to the glamorization of overwork behavior. More importantly, however, category 7 explicitly captures perceptions of and triggers for the glamorization of overwork in pursuing managerial careers (sub-question 2). Moreover, C1 should be considered a marginal category. While it has no direct impact on the research question, it is nevertheless important to capture the workload and current well-being to underscore the overall findings.

### 4.1. Job demands

Certain job demands should be viewed as an influencing factor and are often responsible for respondents to feel overwhelmed or stressed. The literature-based clustering was also applied to the empirical research for this study, as cognitively or emotionally challenging job demands were identified on the one hand, but on the other hand, also challenging job-specific aspects occurring in the social context or on a physical or broader organizational level. While cognitively or emotionally demanding job attributes were particularly highlighted in this regard, pressures arising through social dynamics are also a dominant stress factor. The following subsections shed light on these results in greater detail.

**Table 3:** List of thematic core categories. Own compilation.

| List of thematic core categories (deductive) | frequency |
| --- | --- |
| Code system | 792 |
| Particularly significant areas (markers, no category) | 35 |
| C1: Workload and current well-being | 26 |
| C2: Intrinsic motivation, personality, general attitude | 111 |
| C3: Job demands | 91 |
| C4: Job resources | 145 |
| C5: Extrinsic motivation or incentives for work behavior | 164 |
| C6: Perception/observation of an *overwork climate* | 43 |
| C7: Perception of the glamorization of overwork | 177 |
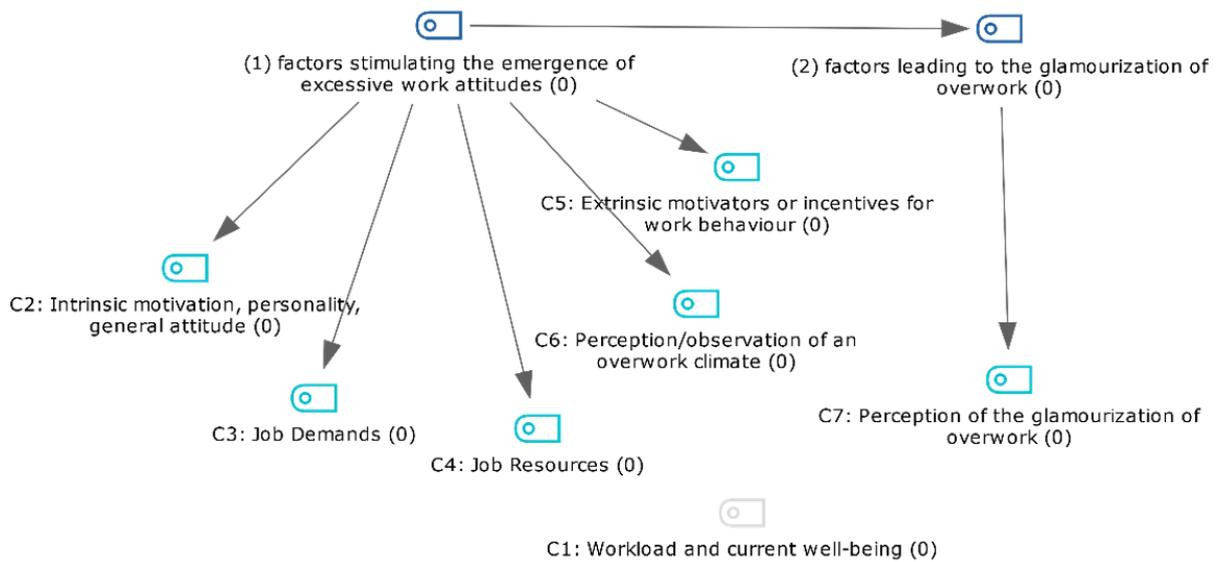


**Figure 5:** Outline of the data structure. Own compilation created with MAXQDA, based on core categories and empirical results.

### 4.1.1. Cognitively/emotionally challenging demands

Various job demands were identified which, on the one hand, exert extremely high cognitive requirements on respondents and are thus perceived as straining, and closely linked to this, also have an emotionally draining effect. The manifestations of these job demands that were filtered out as being particularly significant to respondents are discussed in the following.

*High content responsibility.* The considerable degree of responsibility for tasks and outputs the respondents produce, e.g., in connection with customers or large sums of money, plays a central role and seems to intensify the perceived strain or emotionally demanding effect. In terms of responsibility, perceptions differ slightly depending on the job position of the interviewees. For instance, actively enrolled students classified as career starters report a tendency to feel rather overwhelmed by the high level of responsibility assigned to them, specifically in view of their official role (mostly long-term internships). According to their perception, the responsibility associated with decisions they have to make is often

unjustifiably high. For instance, the following quote illustrates this observation:

> *It's just a lot. And in general, under quotation marks, it's really just an internship. And for such an internship, it's actually an insane amount of responsibility. (Interview 9, item 19)*

Since co-founders and firm-owners occupying management positions were included in the sample, another observation concerning perceived output requirements and responsibility levels can be made with regard to this group. Here, the pressure or demands attached to their work performance appears to be significantly high and closely links to existential fear and uncertainties concerning their own and their team's financial stability. In addition, another interesting finding concerns self-imposed responsibility, which is made possible by a job resource (involvement in decision-making) in the first place. Referring to this, responsibility for work-related tasks or activities is also perceived as demanding and, in

some cases, intensifies the straining effect when respondents consciously commit themselves to take on the responsibility.

*High output requirements / workload.*    Overall, respondents appear to face incredibly high workloads in their positions (often explicitly emphasized as "too high"). In a similar vein, working students fulfill a dual role (as students and employees), which generally leads them to experience high levels of cognitive effort. The fact that they actively perform in two work-intensive spheres – academic and professional – and the resulting overall workload is seen as demanding per se. For instance, respondent 4 (item 13) emphasized that balancing several roles can be quite stressful at times.

*Time pressure / lack of time for other topics.*    The time pressure the respondents appear to be facing seems to have a particularly demanding effect, which can again be closely associated with a high workload. In this light, most interviewees referred to a self-imposed time pressure, which they set for themselves so that the workload does not pile up even further. Again considering the dual role of some respondents (master's students + employees), time pressure also occurs in this sense, as a large variety and number of tasks have to be performed in limited periods of time. In addition, instructions and basic expectations of managers play a significant role as far as perceived time pressure is concerned. In this respect, for example, ad hoc requests from superiors are mentioned, which prove to be a strong stress factor, as exemplified through the following quote:

> *But when we, for example, receive very sponta-neous requests from our management, or from any stakeholders who want updates, who want to see the first results, then it is often very (...), then it all piles up at very short notice, that's very stressful. And then you notice that everyone is a bit emotion-ally drained. And everyone is very busy. I would often say, perhaps even overworked to some extent. So these ad hoc requests, so to speak, make it very irregular and exceed the workload. (...) (Interview 1, item 11)*

Therefore, the link of this subcategory to relationship dynamics prevailing in the social context becomes clearly evident. Interestingly, there was no consensus that time pressure should be perceived as exclusively negative. Instead, in certain settings, it may have a favorable effect on one's work behavior, and when being bundled with sufficient resources, it may even be considered a motivator. For instance, this appears to be true for interviewee 7, as stated below:

> *A certain time pressure rather spurs on. The prob-lem is rather when too many tasks come up at once. Then it can be quite challenging. But basically, I find time pressure, as it is currently given, okay. (Interview 7, item 23)*

*Unfamiliar, new topics or tasks / variety of tasks.*    When respondents are faced with topics or work tasks in which they lack prior knowledge or expertise, they generally perceive their situation as demanding and straining. New or unfamiliar work assignments are therefore viewed as emotionally stressful, even if they would not be classified as extremely challenging in terms of content per se. Relating to this, dealing with unfamiliar tasks is perceived as especially challenging when there is a lack of resources to cope with these job demands. This moderating effect of job resources on demands was directly emphasized in Interview 1:

> *On the other hand, I also have to take responsibil-ity for (anonymized), for example, which may not necessarily be in my area of expertise. That prob-ably relates a bit to the resource aspect. In other words, a new area of work without having been directly provided with training or colleagues with expertise, assisting me, or helping me to manage it. (Interview 1, item 21)*

*Team or leadership responsibility.*    The empirical analysis shows that managerial responsibility for larger teams entails a certain unpredictability that can have a stressful effect since the scope of personnel-related concerns is difficult to control, e.g., illustrated in Interview 5:

> *(. . . ) so if you have personnel responsibility, then of course you also have personnel situations that simply don't allow me to say I'm sticking to my plan. (Interview 5, item 5)*

In the specific case of firm-owners in management posi-tions, leadership responsibility also seems to have a highly demanding effect, often converting into job strain, whereby parallels can again be drawn to intrinsic influencing factors described in chapter 4.3 (e.g., sense of duty). In this case, the sense of responsibility towards the team seems to take on a much stronger dimension, increasing the perceived pressure on managers further. Nevertheless, since less than half of the respondents already hold management positions with exten-sive leadership responsibilities, it is difficult to make general observations as far as this matter is concerned.

### 4.1.2. Socially challenging demands

Job demands arising in a social context can stem from hierarchical structures and/or top-down imposed pressures, but other than one may assume, they mostly have different origins. To provide a rough picture: only three respondents mentioned feeling regularly stressed or strained through interactions with superiors or other people in positions of power (e.g., stakeholders, investors).

*Relationship dynamics.*    In turn, stress or pressure seems to be caused primarily by relationship dynamics among col-leagues. For instance, team conflicts or disputes within the organization were mentioned, which were perceived as straining even without active involvement. Furthermore, communication problems also appear to be a central factor in social settings, making relationship dynamics more compli-cated and quickly manifest into perceived strain. If complex

relationship dynamics impede work-related progress (e.g., of projects through continuous coordination loops), this is also perceived as extremely challenging and draining:

> *Simply that you want to do your very best yourself, but if it is other people's responsibility, there's not always much you can do about it. (Interview 7, item 21)*

Interviewee 4 (item 25) referred to specific perceived peer pressures among colleagues, negatively impacting his emotional well-being. At the same time, respondent 1 (item 19) described the team mentality as one that views high requirements and demanding expectations as very positive and never problematic, which, in turn, proved to be straining for her.

Overall, also these described socially demanding job demands are closely interconnected with other factors or subcategories in the context of this thesis. To illustrate this, consider, for example, the following quote:

> *And then I try, even if I shouldn't, but then I also try to reach the colleagues who are actually responsible for this, even on the weekend. (Interview 10, item 11)*

While here, on the one hand, pressure is exerted on other colleagues, who might perceive such relationship dynamics as stressful or straining, a clear incentive for extra work hours on the weekend is also given (the link between category 3 and category 5).

### 4.1.3. Physically challenging demands

*Lack of sleep / little physical exercise*. Generally speaking, physical strain only really appears in the form of fatigue after long working days but does not seem to be problematic. Instead, interviewee 4, for example, (item 23) stated that he feels cognitively exhausted but also experiences too little physical exercise, which may be straining at times. In addition, professional travel activities and high screen time were mentioned as slight stress factors.

However, the fact that ambitious career paths in the business environment may nevertheless critically impact physical well-being was emphasized in two conversations. In this light, the burnout syndrome was mentioned in Interview 10 (item 17, item 41), while respondent 2 referred to previously suffered sleep problems:

> *Or if you really work so much that your sleep suffers, which I actually had when I worked in consulting, for example. Then it would also put a physical strain on me. But that's not the case at all at the moment (Interview 2, item 25).*

### 4.1.4. Challenging demands on the broader organizational level

*High customer / market demands*. High pressure on the broader organizational level primarily stems from customer-related concerns or external influences such as market competition. For instance, respondents feel the pressure to be constantly available due to many customer inquiries or touch-points. In basic words, the interviewees view their tasks as more strenuous or report being confronted with higher demands when a direct reference to customers is given. Naturally, also other factors come into play in this regard and are closely associated with customer demands, such as a higher short-term workload or time pressure.

### 4.2. Job resources

Roughly classified, the interviewees identified job resources through social relationships, at the task level or through the organization of work itself, and in the broader organizational context. In addition, non-organizational or personal resources were mentioned, which are also perceived as contributing elements to being able to cope well with high work demands and work-induced stress or strain.

Table 4 shows the most significant subcategories into which these individual resource levels can be clustered and the frequency with which they were actually referred to as buffering job resources. The most significant single elements and their implications are described in more detail in the following subchapters.

### 4.2.1. Social relationships as job resources

*Supportive exchange between colleagues*. The most significant and frequently emphasized job resources stem from social relationships. More precisely, respondents referred to supportive exchange between colleagues on a professional or technical level and merely in a social, non-work context. For one thing, professional support appears to reduce stress incredibly, and it is emphasized that workload-sharing among colleagues within a supportive team contributes strongly to this. For example, interviewee 3 describes that the support he is experiencing has the following effect:

> *(...) the pressure is then shared between several shoulders, so to speak. (Interview 3, item 17)*

Moreover, also respondent 1 seems to view the support on a professional level as very important, which is illustrated by the following quote:

> *I basically think that it's very helpful to have support. In some way, to have colleagues who have been with the company for a longer time, who have more expertise and who can be questioned openly and partly also informally. (Interview 1, item 23)*

On the other hand, the exchange is also highly relevant on a social level – away from task-related matters – and seems to improve the emotional well-being of the interviewees and reduce their perceived job strain. How so is, e.g., explained in Interview 7:

> *For example, with my direct colleague, we often talk about the fact that we have a lot to do, and that is somehow mutually constructive when she feels the same way as I do. (Interview 9, item 73)*

**Table 4:** Overview of mentioned job resources based on empirical data. Own compilation.

| Job Resources | Interviewees | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Social relationships** | | | | | | | | | | |
| Supportive exchange between colleagues (professional + social) | x | x | x | x | | x | x | x | x | x |
| **Task level / organization of work** | | | | | | | | | | |
| Decision-making involvement/ role clarity | x | x | x | x | | x | | x | x | |
| Encouragement, appreciation, acknowledgement | | | x | x | | | x | | x | |
| Autonomous work | x | x | x | x | | x | x | x | x | x |
| Task significance and meaning | | x | x | x | x | x | | x | x | x |
| Task diversity | | | x | x | | | | x | x | |
| **Broader organizational level** | | | | | | | | | | |
| Trainings and workshops (technical, soft skills) | x | | | x | | | | | | |
| Job security | | | | | | x | | x | | |
| Financial compensation / overpay | | x | x | x | x | x | x | x | | x |
| Promotion and career development opportunities | | | | x | x | x | | x | | |
| **Non-organizational or personal resources** | | | | | | | | | | |
| Self-regulated structure and planning | | | x | x | x | | x | x | | |
| Private compensation | | | | x | | | x | x | | x |
| Intrinsic resources, previous work, and life experience | | | x | x | x | x | | x | x | |

Furthermore, in Interview 2, for example, direct reference is made to the buffering effect that social relationships have in his case on the perceived strain, while interviewee 7 highlights that also the non-work-related exchange between colleagues is considered a basic requirement of the job environment:

> *Emotionally, I would say a very low strain. Because (...), so I would now include something like the team aspect. So I get along great with the team, and that aspect is good, yes. (Interview 2, item 25)*

> *For me, there is no clear separation of professional and private life, especially in the team. I also talk to colleagues about private topics or exchange ideas with them over the weekend. And for me, that's the balance I need to make work more pleasant. Just a short coffee break in between, which was also more difficult in the home office but is always built in. I am definitely the type to do that. Without that, it would not work at all. (Interview 7, item 27)*

Similarly, the importance of social relationships was also emphasized by interviewee 4. Here, however, it was implicitly stated that the exchange among colleagues acts as both a resource and a motivator for long working hours. In this respect, the connection between different subcategories (C4 and C5) again becomes clear:

> *And I think what a very strong driver for me is whether I feel good at work or not. That means whether I like my physical and psychological relationship environment or not. So if I have cool colleagues who I can talk to all day, sure, then I'll be at work longer. (Interview 4, item 73)*

4.2.2. Job resources on the task level or through the organization of work

The findings further show that job resources are also located on the task level or emerge through the organization of work itself. As demonstrated in table 4, active involvement in decisions appears to be crucial since all respondents referred to this aspect. In addition to this, the ability to work relatively autonomously and the perceived importance and meaning associated with one's work seem to be further relevant job resources.

*Decision-making involvement / role clarity.* In essence, almost all interviewees view it as fundamental to know exactly which tasks or topics they are responsible and held accountable for. Being involved in the assignment or coordination of one's work-related activities and areas of responsibility is named a job resource. However, only to a certain extent;

there seems to be a fine line between getting involved and overwhelming individuals with too much involvement. For instance, the importance of role clarity is emphasized in Interview 1:

> *And no one (...) fulfills the role in the same way. And that results in a very unclear distinction between the different interpretations of this role. And that was also very difficult for me at the beginning and certainly contributed to this overload that the role was also so unclear. (Interview 1, item 29)*

*Encouragement, appreciation, acknowledgement*. Encouraging feedback or signs of appreciation by managers are also perceived as a job resource for some respondents. While this aspect could also be seen as an impetus for longer working hours, it was explicitly mentioned as a resource several times, as in Interview 9, for example:

> *And somehow, the praise and recognition you get afterward are worth the work and effort. (Interview 9, item 41)*

*Autonomous work*. This resource also supports the respondents in dealing with job strain. It is primarily expressed in the fact that trust is perceived by superiors, which in turn increases flexibility and allows personal freedom. This means, for example, that high workloads can be better managed or distributed over time by the employees themselves. At the same time, however, it was mentioned several times that high autonomy could also have a negative effect, especially in connection with certain intrinsic factors. The following comment from Interview 7 explains this:

> *But you have to manage your time yourself, you have to deliver your results yourself, so to speak, and then you just have to find the balance, when is enough enough. Because there is no end to all these topics, I would say. (Interview 7, item 9)*

*Task significance and meaning*. Overall, the significance and meaning associated with one's job are also considered essential resources and support the respondents in reducing job strain. If tasks or the profession at large are considered meaningful, the interviewees' motivation is correspondingly much higher, which again implies a strong connection to category 5. Task significance shows, for example, if tangible output and a sense of achievement (e.g., evident through sales figures) become apparent. Moreover, if corporate goals are considered meaningful and reasonable, this also plays into perceptions. The following statement from Interview 2 illustrates, for instance, in which way task significance and meaning may alleviate the perceived strain level:

> *(...) of course, it could also have an effect on the perceived stress. So, for example, if I have a topic that I'm burning for, then I might sit there until 7 p.m., but I still don't find it stressful at all. (Interview 2, item 31)*

*Task diversity*. The event of respondents facing many different task areas and activities is generally sensed as beneficial to compensate for job strain. This is because work routines are perceived as less monotonous but varied and interesting. For instance, high stress may be reduced as tasks of varying difficulty can be mixed (straightforward vs. complex tasks). Overall, the picture conveyed by respondents was that task variety leads to more fun and enjoyment and has a strong motivating effect. At the same time, however, it must be noted that this job resource is only considered as such up to a specific limit, as Interviewee 1 highlights:

> *But I would say that a variety of tasks is not always conducive to motivation. So I do believe that it is the case that if you are working on different topics, that basically also keeps you motivated, but I realized that if I have a clear focus on one of these projects, which is already very extensive in itself, I find it easier than working on different projects. Simply because of the focus. (Interview 1, item 29)*

### 4.2.3. Job resources on the broader organizational level

*Training, job security, fair pay, career development opportunities*. Job resources that have a beneficial effect in the broader organizational context include training and workshops (from a technical and soft-skill perspective), perceived job security, fair financial compensation, and promotion and career development opportunities. These factors are regarded as mitigating effects on job demands, but they overall often play a somewhat secondary role or are perceived as so-called hygiene factors, i.e., elements of the job that are deemed basic prerequisites.

For instance, certain workshops (e.g., promoting the employees' mental health, as mentioned in Interview 4, item 27) are aimed at strengthening personal, intrinsic coping skills. Moreover, training for new areas of expertise to adequately prepare for complex topics is stated in this regard. Job security is assumed to be given in most cases, although here, company owners or co-founders in management positions represent exceptions. The situation is similar with career development opportunities and salaries, as also these factors are viewed as requirements for most respondents.

### 4.2.4. Non-organizational or personal resources

*Intrinsic resources, previous work / life experience*. Similar to job demands stemming from internal desires or characteristics of one's personality, many respondents also referred to personal, intrinsic resources that they had acquired through past work or life experience. Interviewee 5, for instance, provided an example of this:

> *And I think you also asked about the topic of which resources I use. And I also have a lot of mental, active work that I do here with myself, so to speak. So it's like that I work very strongly out of the approach of resilience in customer situations or in stressful situations with my consciousness actively.*

*I would consider myself very resilient here, and that helps me, of course. (Interview 5, item 23)*

*Private counterbalance.* At the same time, however, respondents also strongly suggested non-organizational factors, i.e., aspects of or events occurring in their private time, which also help them to cope with stress or strain caused by work. This "private counterbalance," as interviewee 7 (item 25) describes it, takes place in the form of sports, consciously planned rest periods, and through aspects ascribed to the social safety net in the sense of family and friends.

*Self-regulated structure / planning.* Moreover, personally initiated structures and the planning of work topics, active calendar management with focus blocks, good time management, and a clear prioritization of topics seem to help the respondents. These factors can, therefore, be mentioned as job resources of personal origin.

### 4.3. Intrinsic motivation for high work efforts

The excessive work behavior or notably high work-related efforts of respondents seem to be strongly attributable to intrinsic factors, which may be viewed as byproducts of the personality or general attitudes of the interviewees. In fact, several subcategories emerged inductively, capturing the intrinsic motivational ground. They are discussed in the subsequent section.

*Perceived indispensability of one's own self.* The importance respondents appear to attach to themselves to fulfill specific work tasks, which other members of the organization may also take over, can be listed as an intrinsic cause, leading to higher work motivation among the interviewees. Closely linked to this, the data clearly show that respondents generally experience difficulties delegating tasks to others. Instead, they are willing to devote extra hours to carry out their work tasks by themselves:

*If I'm the only one who can take care of these issues and it's hard for me to hand them over or get help, then I'd honestly rather work more and longer instead of giving someone a training, who will then respond with a lot of questions. (…) Yes. So I'm basically also someone who prefers to do it myself instead of handing it over. (Interview 8, item 45)*

Similarly, the statements below demonstrate that respondent 10 described the experienced importance attached to himself, while interviewee 6 likewise observed this in her professional surroundings:

*Well, I have to say, before the first burnout, I thought I was irreplaceable. Really, I believed that. Maybe everyone believes that. (Interview 10, item 17)*

*It is also often associated with importance. Yes, importance - because you simply have the feeling that you are so incredibly important. (Interview 6, item 63)*

*High willingness and motivation to learn.* The empirical investigation further shows that the interviewees' interest in many different topics and their will to develop new skills and/or acquire knowledge also influence excessive work behavior. In a way, this motivational factor embodies an intrinsic resource, as respondents claim that their work-related efforts pay off if their willingness to learn is satisfied. The fact that such an intrinsic drive is by no means inherently bad but may nevertheless produce negative side effects such as overtime is, for example, revealed by the following statement:

*But the other thing is when I really delve into a subject because it really interests me, when I do research because I think to myself, I really want to master this well, I really want to understand it. I think that's actually a very positive aspect. This usually results in a lot of work and sometimes also in overtime, but I often don't feel that this is negative because it fulfills me in a way. (Interview 1, item 33)*

*Personal aspirations, high (quality) standard.* Interestingly, all respondents spoke of a certain intrinsic motivation, the origin of which they are mostly unable to explain precisely. In this aspect, the standard referred to is the basic need to complete tasks in the best possible way and an apparent inner drive towards high demands in both personal and professional contexts. Another subcategory was included in this subcode to assess the rationale for this personal attitude closely, or the "high standard of quality for oneself", as it was literally referred to in Interview 8 (item 41). From setting such high aspirations and standards to compensate for personal insecurities to family-influenced striving for discipline and performance, or standards engrained and adopted from previous work environments, reasons seem to be multi-layered. It should also be pointed out that none of the interviewees perceive these self-imposed standards to be negative. The perceptions revealed in Interview 2 exemplify this:

*But my standards for myself, well I'd like to always maintain that motivation. (Interview 2, item 41)*

*To accomplish something can also ease the strain. And that is the mindset I have here. (Interview 2, item 41)*

*Urge to do things immediately / fast / not to defer them.* Overall, a strong urge of respondents to complete their work tasks immediately or not to postpone them, and to consciously accept working overtime hours for this purpose, also plays a role in their work behavior. At the same time, however, this desire is strongly linked to extrinsic factors, such as e.g., a high workload that accumulates if it is not dealt with in a timely manner.

*Urge to prove oneself (to live up to other people's standards).* Another noticeable intrinsic motivator favoring heavy work

investment is the urge to prove oneself to or to satisfy the expectations of others. Since social settings and their dynamics come into play in this regard, this also strongly links to extrinsic aspects. The following quotes from Interview 4 and Interview 1, for example, illustrate the intertwining levels of influence eventually triggering this urge:

> (...) when you surround yourself with good people, of course then also inferiority-complexes come up, so to speak. To say: What kind of people are they, who are somehow able to perform all day. And of course complexes come up. And then you also want to prove yourself, in order to be able to say that I can keep up with them. (Interview 4, item 99)

> Yes, I think the basic idea has always been to prove oneself. I think this is due to two things. On the one hand, I personally always (...), I believe that I link my self-worth very much to what others think of me. This is perhaps a very personal characteristic, but I notice that it deflects very much upwards or downwards, depending on what opinion I think others have of me. So very dependent on the opinions of others. Or how I imagine others' opinions might be. (Interview 1, item 61)

_Self-fulfillment (joy, meaning, fun)._ If a strong sense of self-fulfillment in connection with one's job is present, which is also associated with fun, meaning, and enjoyment, the intrinsic motivation for heavy work investment appears to be particularly high. In fact, most interviewees also note that they consider their work to be somehow fulfilling, as is the case for respondent 2:

> And defacto, I personally see working in sum as nothing negative but as something positive and fulfilling. (Interview 2, item 41)

In this context, it is essential to note that three interviewees were actively involved in establishing the companies in which they currently hold management positions. In their specific case, the communication about being able to fulfill oneself through work-related tasks and activities was especially emphasized. For instance, two respondents even compared their relationship with their firm with the role of being a parent, caring for a child.

_Conscientiousness (commitment / collegiality)._ There appears to be a very high sense of duty in all respondents; a characteristic that significantly impacts their work behavior. Generally speaking, two levels became evident, at which this feeling of conscientiousness. These are subsumed here as commitment (on the organizational level) and collegiality (on the personal level). On the one hand, respondents mentioned that they have a certain basic attitude towards commitment to the organization and the achievements of its goals. On the other hand, this sense of duty emerges in the social context and stems from relationship dynamics. Linked

to this, respondents who already hold management positions reported that they do not want to disappoint or fail their team and, in connection with this, tend to give their employees the feeling that they are constantly available and present. Within social settings, a high degree of collegiality also causes interviewees to offer support in the form of taking on some of the workloads of team members. Interestingly, this intrinsic factor seems to be particularly heavily weighted, as this subcategory was also most coded compared to other motivators in this category. However, this does not allow for generalizations. To exemplify this reasoning, the following excerpts demonstrate the two levels described above:

> So it's just, I would say that I have a great sense of duty. And if I am part of an organization, then I am already committed and then it is important to me to advance this organization. (Interview 4, item 17)

> Or simply when a colleague needs support, for example. To tackle the social context again. If they have too much to do at the moment and you can take pressure off of them, then that is also a reason to take on more workload. (Interview 7, item 37)

Although the above-elaborated division into individual subcategories represents an attempt to assign intrinsic motivation for heavy work investment to individual clusters, external influences appear to impact intrinsic factors substantially in a reinforcing manner, as demonstrated through several examples. While these personality-dependent intrinsic characteristics are not bad in essence, e.g., the drive to learn or self-imposed high-quality standards, they may develop into problematic factors in connection with other, mostly extrinsic influences. In this scenario, work engagement initially sparked by intrinsic motivational characteristics may grow into excessive work behavior with health-impairing effects. A straightforward example of this was provided by interviewee 10, who reported having already been hospitalized twice as a result of the burnout syndrome (item 9), but nevertheless considers his basic intrinsic motivation to be fundamentally valuable and positive (item 19-23). In this respect, one should take that many findings and thus categories strongly intertwine into account. Complementary to this, all respondents appear to struggle with completely detaching themselves mentally from work and sense a constant desire for productivity, as exemplified through the following quote:

> So it may be that it has improved to some extent, but in any case, at the beginning I couldn't let go of the thoughts of work so easily. So even when I was lying in bed in the evening, I had these thoughts (...). (Interview 9, item 27).

This observation should also not be labeled as negative per se but may contribute to mental strain or stress in the long run. In other words, the inability to detach oneself from work could possibly manifest itself in the mental state of feeling overworked.

4.4. Extrinsic motivation or incentives for high work efforts

In broad terms, two types of extrinsic incentives affect respondents' work behavior: motivators arising in the social context and drivers on the organizational level. The hierarchical code-subcode model below (figure 6) illustrates the stated aspects that come into play, with the number in brackets indicating how often single transcript passages were added to the subcategory. Nevertheless, it is important to keep in mind that this gives no indications of the importance of these elements per se.

4.4.1. Social context

Four different subcategories have emerged in the social context, providing a somewhat nurturing ground for overtime or long working hours.

_Managers and supervisors._ Overtime often stems directly from the management level. On the one hand, people in management positions appear to have an immense role model effect. According to the interviewees, they often exemplify a certain excessive way of working themselves through their late-night presence in the office or obvious constant availability. On the other hand, respondents also feel influenced by their explicit actions and statements. For example, recognition or encouraging comments from superiors are not only perceived as a job resource in some instances but may also act as a driver for extra work efforts. The following statements underscore these arguments:

> _So my direct manager, she already works a lot, where I've often wondered how much overtime she might have. I don't really know. But (...) she does. Actually, this way of working is exemplified. They are really available all the time, even in the evening. (Interview 9, item 51)_

> _And other drivers, yes, this again relates to recognition and compliments. So if the supervisor says to you "Wow, you really did a great job last time, can you do this again quickly now?" - then who would say no? (Interview 4, item 73)_

The expectations of managers - in terms of what managers themselves perceive as standard working hours - are also strongly linked to the work behavior of the respondents. In addition, the workload imposed by superiors often indirectly implies overtime, which means that managers should anticipate in advance that overtime has to be worked, given the amount of work assigned in a certain period of time.

_Colleagues and fellow students._ In social settings among colleagues or fellow students, the situation appears to be very similar. For example, peer recognition is also mentioned as a significant driver. However, a certain sense of responsibility toward colleagues emerges much more strongly here. Since the respondents want to offer them support or not disappoint the team as a whole, they are willing to work overtime or extra hours. On the other hand, it is clear from the interviews that the interviewees work in a very performance-oriented, ambitious environment in which colleagues also have a high

presence. For instance, interviewee 2 (item 51) explains that colleagues who deliver a comparable workload or are equally present are certainly also considered an incentive for him. Other respondents describe their perceptions similarly:

> _If my neighbor does it, then I have to do it too. So that's how it is, yes. Classic peer pressure. And then there is also this, what do you call it, "presenteeism". So you just have to be visible, that's just part of it. (Interview 4, item 79)_

> _And when they set an example like that, I notice, especially as an intern, where you are oriented toward your permanent colleagues, that it also puts pressure on me to stay longer somehow. And I also notice that I stay longer than is perhaps good for me. Or I stay longer than it might be necessary now, and I have the feeling that colleagues do the same, because going home alone is always such a special act. So I think those who stay longer always have a very good feeling when they are the last ones to leave the office. (Interview 1, item 35)_

Interestingly, this alignment with the work behavior of others - whether colleagues or managers - also appears to occur within online settings (e.g., through Microsoft Teams) since it is, for instance, possible to detect if someone is still online in the evening.

_(Desired) professional environment._ In order to pursue a managerial career, overwork somewhat appears as a necessity. Hence, there is a strong connection here with the idea of _overwork climates_ (see 4.6). However, what is striking in this context is the repeated reference to the working environment in consulting, in which demanding workloads and vast amounts of overtime seem to be regarded as standard. Interestingly, ex-consultants strongly influence the (team) climate in their new organizations as they appear to bring this specific standard for consulting into their new companies. In a similar vein, the startup environment was also described as highly work-intensive. Overall, the following statement from Interview 1 underscores these perceptions:

> _I think that my studies and also this career aspiration in the business sector already push me into a particular field of positions that are basically already associated by their nature with high work demands. So I don't think that I necessarily always go into a new job, or into a new internship, with the basic attitude that I have to work an insane number of hours. But I notice relatively quickly that somehow my colleagues all work very much. For example, in my case, I really notice that some of them come from consulting, where a lot of overtime is actually standard. (Interview 1, item 33)_

_Private context._ While the personal environment of the interviewees does not appear to be an overall dominant influencing factor, it may also elicit workaholic behavior. In
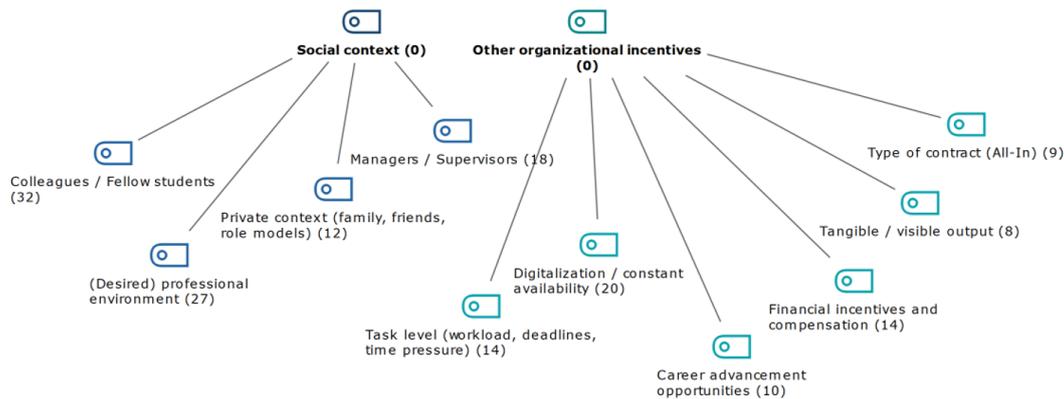
**Figure 6:** Hierarchical code-subcode-model. Own compilation created with MAXQDA, based on empirical results.

this light, interviewees referred to their upbringing and "basic principles" learned at home and mentioned their parents' role model effect and its impact. Interviewee 5, for example, stated the following:

> And you always think back a bit to your parental home and the father figure and so on. And that certainly also has a strong impact on me. My father was in management himself, and he has already passed away. But you probably always emulate this image a bit, that your father would have been proud of you so that all certainly has an influence, I have to admit. (Interview 5, item 35)

At the same time, however, the respective circle of friends also seems to influence excessive work behavior. This appears to be especially true when friends have taken similar career paths or when colleagues are also personal friends, making work a topic of conversation in private surroundings.

### 4.4.2. Other organizational incentives

*Task level / visible output.* Other extrinsic sources of excessive work behavior can be found on the task level. For instance, high workloads and strict deadlines, which relate to high time pressure, come into play here. In this sense, respondents stated that they have a considerable amount of work to do and that it is often impossible to work through the given workload without devoting extra hours. In most cases, there appears to be a lack of available human resources to handle the volume of work. For example, interviewee 10 (item 57) refers to this issue. Moreover, measurable output such as sales figures also acts as a driving force for respondents.

*Financial incentives / type of contract.* In addition, respondents conveyed a somewhat consistent picture when describing whether financial incentives are causing them to work longer hours. In this light, the majority emphasized that other reasons influence them significantly more, while their salaries still need to be proportionate to their efforts. This means that respondents generally agree that a high wage justifies working overtime frequently. The following statements underpin these general perceptions:

> I mean I just got the call that I am going to get a bonus. And I was (...) I was really happy, but I don't think that's what it is all about. (Interview 9, item 43)

> But if someone pays me more for working more then I honestly say no because my time is worth more. Or just my free time is worth more than any hourly wage I could be paid. (Interview 8, item 49)

> But I also see that I'm in a segment of the income class where I say I don't see it as unjustified if I'm asked to be available for one, two, three, four hours above the 40th hour, yes. And that is this salary component. (Interview 2, item 51)

In this context, six interviewees also linked their contractually regulated payment model, namely so-called "all-in-salaries", to whether financial incentives act as a driver. Generally speaking, respondents appear to view this salary model as one that automatically justifies overtime or extra work. Interviewee 5, for example, mentioned the following:

> Well, we have all-in salaries, which means that the salary form alone assumes that you work more than 40 or even 38.5 hours. And it is also compensated. But the agreements are made in such a way that even if employees work more, and this is also considered normal, that they work more. (Interview 5, item 47)

*Career advancement opportunities.* Whether career advancement and promotion opportunities are intrinsic motivators for excessive work behavior is not completely clear from the respondents' answers. For many, this aspect seems to play a secondary role. For instance, on the one hand, interviewees mentioned that they hold a satisfactory position or that their career stage is advanced enough already, making this aspect somewhat redundant. On the other hand, those respondents in managerial positions of smaller organizations mentioned that opportunities for further advancement simply do not exist within their given work environments. In similar terms, the group of working students mentioned

that this aspect is not a crucial determiner, especially in internship positions. This is because promotions are generally not expected in such early stages, or permanent positions in their current organization are not a personal ambition. For instance, the following excerpt from Interview 4 exemplifies this line of thought:

> *Promotion opportunities are not such a driver at the moment because there is no position in either organization that I could move up to. But that will definitely become a driver; I know this already (...). (Interview 4, item 73)*

On the whole, one can summarize that the general perception is that career advancement necessitates the willingness to work extra hours, as emphasized, for example, in Interview 8:

> *Especially in terms of career advancement and our societal framework or the idea that still prevails, but that I don't completely agree with. If you want to move up, you simply have to put in more than others, you have to (...) and I think that's simply the point, you simply have to put in more time. I don't think that more performance has to come out of it, but you just have to be more visible in more topics and areas and put more time into it. (Interview 8, item 61)*

*Digitalization / constant availability.* Another determiner of excessive work behavior is digitalization and associated constant accessibility. This aspect seems to be a major factor, influencing long working hours or extra work. Furthermore, it also comes into play as far as the interviewees' difficulty in fully detaching themselves from work is concerned. In this context, respondent 10 (item 9, item 50-51) even mentioned that digitalization was one of the major causes of his burnout. In addition, results show that the boundaries between the workplace and home are increasingly blurred. For instance, many appear to have access to work systems or accounts at home (E-Mail, Microsoft Teams, social media) through their home office equipment, while some also use their company laptops privately. In addition, some respondents also mention that they are usually logged onto work accounts on their personal mobile phones. This again appears to enable people to work on late evenings or weekends and allows colleagues to read and respond to messages outside of standard working hours.

While the constant availability of respondents is one crucial aspect to point out in this regard, digitalization appears to have further noteworthy implications. For instance, interviewee 5 (item 17) perceives remote work as causing an "increase in density" and mentions that digital work implies fewer rest times. Similarly, respondent 2 (item 59) states that he feels that colleagues and superiors always expect him to be available throughout the whole day when working from home. The following statement made in Interview 1 appears to summarize these general perceptions accurately:

> *And that is once again a factor that is influenced by digitalization (...), so it is a double-edged sword. On the one hand, I think it is more difficult to be present as a result of this digitalization and remote work. You have to actively send out mails again and again, really deliver results, or send updates and so on, if you don't have the physical presence. You might have even more pressure to be even more available and to show yourself even more. On the other hand, I think it also makes you even more accessible and available, which often makes it more difficult to distance yourself. (Interview 1, item 41)*

### 4.5. Perception or observation of an overwork climate

Based on the theoretical construct of Mazzetti et al. (2016), results further capture whether and to what extent so-called *overwork climates* appear to prevail in the case of respondents, providing a nourishing ground for the development of workaholic behavior (as closely investigated in chapter 2.4.2.1, view for detailed clarifications).

Indeed, the described work environments of respondents appear to show resemblance with an *overwork climate* rather than an *employee growth climate*, although a few characteristics did correspond to the latter. In this context, the two main dimensions of an *overwork climate* were addressed separately to describe this highly deductive subcategory accurately. Thus, it was examined whether and to what extent overwork is collectively viewed as a necessity or standard. Additionally, it was assessed whether and in what way the shared perception is that overwork is not restricted or rewarded. Table 5 below shows the study's results regarding these two distinct manifestations of an *overwork climate*.

This tabular overview provides an outline of the respondents' perceptions and thereby shows whether they have evaluated the named characteristics of these dimensions as applicable (+) or inapplicable (-) to their existing work environment or whether they were could not fully say so ($\sim$).

In addition to this overview, it is essential to take another closer look at the results to explain why respondents drew these conclusions in the first place. As discussed in detail in the literature review of this paper, job resources are lacking in an *overwork climate*, and organizational members face high work and performance pressure (Mazzetti et al., 2016, pp. 880–881). These prevailing conditions overall provide a nurturing ground for workaholism. However, it is equally clear that all of the situational variables and motivational factors presented up to this point - especially prevailing job demands or extrinsic motivators - may significantly influence this climate. Nevertheless, looking explicitly at the literature-based manifestations characterizing these *overwork climates* and answers presented in this regard, the implications discussed below become apparent.

*Overwork endorsement.* Here, a somewhat clear picture emerges, as the majority strongly agrees that excessive work or overtime is collectively seen as a necessity or standard within one's work setting. On the one hand, this becomes

**Table 5:** Overview of respondents' perceptions of an *overwork climate*. Own compilation.

**Overwork endorsement**
meaning that extra work and overtime are viewed as standard or usual and are virtually considered a prerequisite for career advancement
    Applies = +
    Indifferent = ∼
    Does not apply = -

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| + | + | + | + | + | - | ∼ | + | + | + |

**Lacking overwork rewards**
meaning that overtime is generally not rewarded (e.g., feedback, new opportunities, higher responsibilities), apart from financial compensations required by law
    Applies = +
    Indifferent = ∼
    Does not apply = -

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| + | ∼ | - | - | - | + | + | ∼ | - | ∼ |

evident through managers' and work colleagues' exemplification of workaholic behavior. Interviewee 1 (item 19-23), for example, notes that she perceives the team mentality as one that views excessive work behavior and pressure in favorable terms. On the other hand, respondents generally expect that their career paths would not be as steep if they refused to engage in overtime. Moreover, for many, the need to work long hours is linked to the fact that the given workload is too high to be performed during usual work hours. This reasoning, as noted above, is already reflected in other categories, indicating that the interplay of many factors, but especially demands or motivational factors stated here, contributes to the emergence of an *overwork climate*. The statements below underpin the arguments from above:

> *But for my specific environment, I would now say, yes, working extra hours is part of it and I think, that is my perception, is also expected by the managers to a certain extent and would have a negative effect on your career path if you were to drop the pen after 40 hours. (Interview 2, item 63)*

> *But we do definitely have a climate where it is completely normal to work 60 hours or more. That is a normal week. So no one says, wow, there is a lot to do; it's just completely normal. (Interview 5, item 47)*

The following statement shows an example of an indifferent response. Interestingly, interviewee 7 uses a reference point to underscore her perception and also brings in the respective type of contract:

> *Yes and no, so I'm sorry, the answer is probably not very satisfactory. I'm still thinking about (...). A*

> *certain degree yes, but not, not to an extent as it is for example in consulting. So by the fact that we also have an all-in contract it is assumed, for example, that we, so for example 10 overtime hours a month. That's definitely required, and I think it's also important for career advancement. But it's not assumed that you work an extra 20 hours a week. It's not required and it's not necessary to achieve something at our company. (Interview 7, item 45)*

*Lacking overwork rewards.* The results in this second dimension of *overwork climates* do not appear to be quite as conclusive. Hence, the collective feeling that overwork or additional efforts are not compensated or rewarded is not present for most respondents. Interviewee 9 (item 70-71), for example, agrees that her high efforts are compensated through credit or recognition from superiors, while respondent 4 (item 83) views extrinsic aspects such as business trips or events as rewards. In addition, he emphasizes that his organization makes many attempts to increase the value of the organization's human capital, meaning his team and individuals. In this regard, offered feedback and training are stated as examples. Furthermore, the significant overpayment was mentioned as an existing form of reward in Interview 5, as the following quote illustrates:

> *That is not the case, so it is definitely rewarded. Well, it's both (...), so if we assume that the extra work is of some use, and you achieve your goals better as a result. And then we have a variable salary component where it is definitely rewarded that you work more. And we are far, so the collective agreement is more of a joke for us. We are light years above that. And accordingly, yes, we*

*have a performance-enhancing and also a wage-enhancing system. (Interview 5, item 49)*

Some respondents (indicated by ∼ in table 5) recognize the existence of certain rewards or compensatory elements in their work environments. However, they mostly note that they are not very impactful for them:

*Rewards, I would say (...) yes, perhaps thanks are expressed for some overtime or when something has been checked off, but also not particularly extensive, so it is kept within bounds. (Interview 2, item 69)*

In contrast, some interviewees noted that they do not feel rewarded or compensated for high work efforts or devoting extra work hours. For instance, the following excerpts from Interview 7 and Interview 1 explain these perceptions:

*And it's not really appreciated or applauded or rewarded when you work overtime, but it's actually rather taken for granted or expected. (Interview 1, item 49)*

*That is true, yes. I would have said so because it is not perceived as such whether you have worked these overtime hours, but as I said briefly, it is simply a matter of doing your job well. And I don't know if it's always clear what's behind it. Because in theory, a task often sounds simple, but in execution it is usually three times as complex as it originally appears, and accordingly more time is invested in it than you think at the beginning. And I don't know now whether this translation performance is always known. (Interview 7, item 49)*

*Employee growth climate.* In line with the theoretical understanding of an *employee growth climate* (see, e.g., Schaufeli, 2016, p. 1058), some interviewees also mentioned individual aspects or features of their work environments that could be associated with such a climate. Examples include mutual empowerment and perceived support within the team. In addition, respondents refer to one-on-one coaching, constructive feedback from superiors, and extrinsic signs of appreciation (e.g., small gifts). For instance, the following aspects were mentioned in interview 5:

*Each person normally has their own individual coaching session, so their 1:1 meeting with their manager or their manager's manager. And here, of course, feedback is always provided, and is also requested. (Interview 5, item 51)*

Overall, however, there seem to be far too few aspects to classify the respondents' work environments as *employee growth climates*. Instead, the prevailing climate and present conditions appear to resemble the counterpart of this construct, as previously described.

## 4.6. Workload and current well-being

The current well-being of all interviewees was captured and clustered into three different subcategories (positive, fluctuating, and negative), depending on individual responses. Despite the preceding scale on workaholism (see subchapter 3.3 for further explanations), one could nevertheless not presume that all respondents were experiencing negative effects associated with ceaseless work efforts.

*Positive.* Very few statements were assigned to this subcategory, implying that few respondents assessed their current workload and well-being as completely positive. Generally speaking, positive aspects concerning the workload were commonly highlighted initially but immediately followed by less positive statements. The quote below from Interview 7 provides an example of this:

*(. . . ) that's definitely within the scope for me, I'd say. So the working time is not such a problem. I think it's more about when the pressure is there (. . . ). (Interview 7, item 9)*

Moreover, evidence could not explicitly be identified, indicating that work enthusiasts are also in the sample. Although most respondents associate work with fun and satisfaction, they do not quite fulfill the criteria to be fully classified as such. In this context, the following response represents rather an exception, with work engagement being clearly postulated here:

*I'm not sure if you know the feeling, but for me it's not only work, but it is a passion that's just part of my life right now. So it's basically my hobby and work mixed together. (Interview 3, item 13)*

*Fluctuating.* When considered collectively, a strong tendency of all interviewees to classify their state of well-being as somewhat fluctuating or unstable became clearly evident. It is particularly interesting to note that three interviewees used a reference point to compare their current situation when justifying why they perceived it as not entirely positive. For instance, the present well-being was compared to a previous severe health impairment due to two burnouts, or to a difficult personal crisis resulting from overly heavy workloads. In addition to this, also previous, even more demanding work environments (mostly in consulting) served as a reference point in describing the current state of well-being. While underlying causes are diverse and link to job demands or lacking resources, most respondents mentioned that their perception is extremely phase-dependent and mostly worse in peaks of projects. The following interview transcript excerpts undermine these explanations:

*How I feel about it depends on the phase. (Interview 7, item 54)*

*Yes, but all in all I would like to go down a little bit (reduce working hours), although of course compared to consulting it is already a completely different level, yes. (Interview 2, item 13)*

*I: Okay. And is it really the case that you say it's optimal and that you can distance yourself well? So your scope of work is currently suitable for you - do I understand that correctly, or would you not really say so?*

*B: Yes, I mean, you really try (...) you really try not to look at your mobile phone on the weekend. But every now and then you catch yourself. That you do look at it once in a while. But compared to two or three years ago, I would say that I have reduced it and it is better than before. That does not mean it's less stressful, but it's a different kind of stress. (Interview 10, item 10-11)*

*Negative.* Despite arguments about fluctuating well-being, certain indicators that most respondents did not cope with their situation particularly well, did exist. Interestingly, most interviewees rather mitigated their negative perceptions by emphasizing positive aspects before mentioning negative elements, by which they purposely or subconsciously weakened their statements on poor well-being. For instance, interviewee 9 (item 9) uses the relatively neutral term "intensive" to describe the situation she is experiencing – a significantly less negative framing for expressing that the workload is not perceived as easily manageable. Similarly, the following quote from Interview 3 shows that respondents had difficulties in articulating negative perceptions in a straight-forward manner:

*I would be lying now if I said it was optimal, so at the moment I certainly have far too much to do, far too little time (...) so too many activities in any case. (Interview 3, item 9)*

Hence, the workload and well-being of respondents can overall be classified as fluctuating to negative, with few exceptions. While the level of satisfaction with the respondent's well-being was not per se negative, overtime was frequently mentioned yet rarely bemoaned. Nevertheless, the personal desire for a reduction in overtime and/or less workload was mentioned in several interviews. Although this leaves room for interpretation in various directions, one could argue that most perceptions were generally negative but communicated in a somewhat attenuated way.

## 4.7. Perception of the glamorization of overwork

The findings discussed in this chapter show how the glamorization of overwork is related to heavy work investment in pursuing managerial careers. Prior to the more detailed written explanation in the further course of this chapter, the following figure 7 illustrates the correlation between the investigated aspects in brief terms.

Generally speaking, the given surrounding in which respondents find themselves and the familiarity and trust with their respective counterparts within these surroundings appear to act as a moderating factor for the glamorization of overwork. In other words, depending on the given environment (professional versus non-professional), one specific stimulus or the interplay of several leads to one or both discovered manifestations if the perceived trust is on a low to medium level. Contrarily, in high-trust settings, the glamorization of overwork behavior does not occur.

Thus, the perceptions and behaviors of the respondents were captured with regard to two different contexts. On the one hand, this included the professional environment, i.e., within the organization, among colleagues, or fellow business students. On the other hand, the non-professional environment, i.e., family and non-work-related friends, were considered. Within both environments, two types of relationship levels may be found, roughly differentiated as (+) high levels of familiarity and trust versus (-) low levels of familiarity and trust.

As stated above, respondents indicated they do not glamorize overwork when interacting with people they trust. For instance, this applies to the exchange with close colleagues (thus, in the professional setting) or friends (thus, in the non-professional setting). Hence, if familiarity and trust are high, perceived exhaustion triggered by unhealthy work behavior is communicated honestly and unadornedly. The following interview excerpts underscore this strong dependence on familiarity and trust within both distinct settings:

*I can also talk very openly with a colleague, but then I look for the conversation with this specific person and know that this is my person of trust. (Interview 7, item 56)*

*I think the answers differ here. So with someone I am close to I would talk about it quite openly or perhaps complain a bit or lament a bit in a certain way. (Interview 9, item 73)*

*I think that somehow depends very much on how the relationship to the person is. I would say that I have one or two colleagues that I am very close to. Where I know they have either already brought it up themselves that they are overwhelmed with something, or that they are uncomfortable with something, or that they are overworked. And as soon as that is opened up, so to speak, it's easier for me to be honest and to say that I'm also overwhelmed with work. And then these are also people with whom I tend to have a relationship of trust. (Interview 1, item 53)*

*It depends on how close these people are to me. So if I don't know the people very well, it's usually like, "Yes, I work a lot, but it's not a problem. I'm sure it will be over soon. And yes, it's just part of it." (Interview 6, item 61)*

Different stimuli or conditions (see figure 7) may trigger the glamorization of overwork behavior when only low to medium levels of familiarity and trust are involved. This applies to both the professional and the non-professional environment.
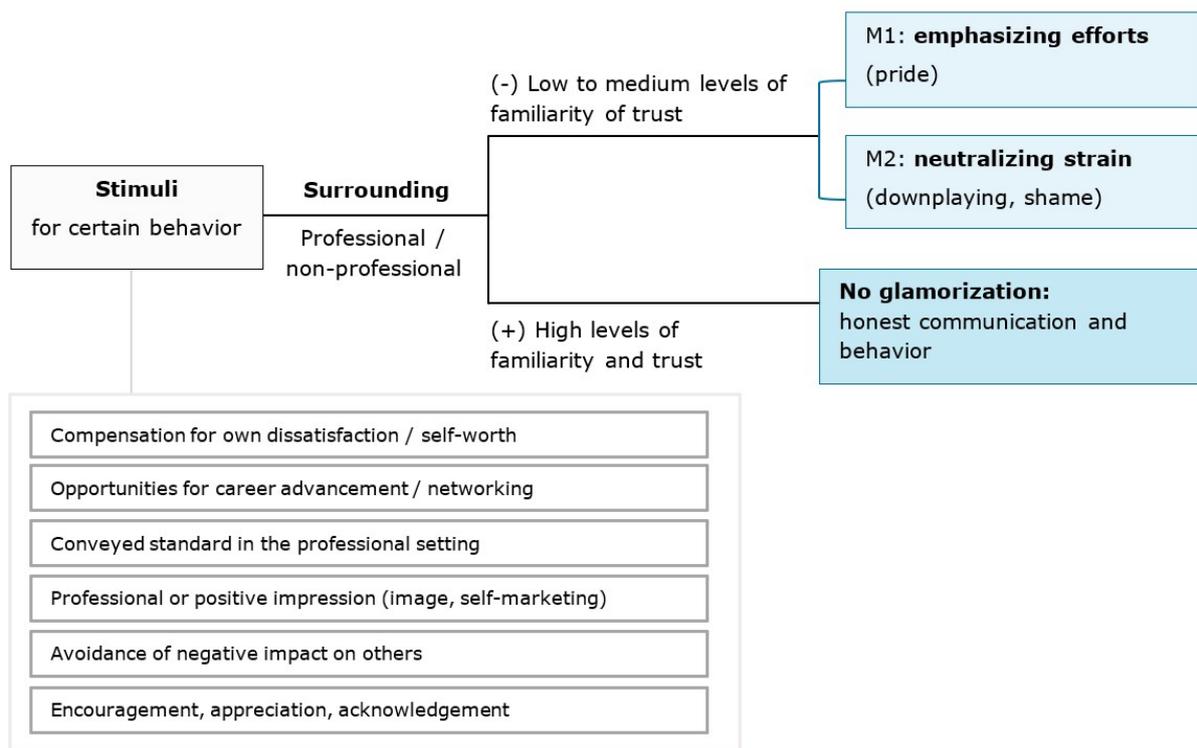
**Figure 7:** Correlation between different aspects contributing to the glamorization of overwork. Own compilation.

The understanding of this study is that the glamorization of overwork means the false portrayal of excessive work behavior in a positive light. In this respect, the findings show this glamorization may ultimately appear in two different manifestations, which closely link to the given surrounding (professional / non-professional). The first manifestation 1 (emphasizing work efforts) describes the positive connotation of one's excessive or unhealthy work practices in terms of feeling pride and, thus, actively emphasizing one's behavior. In turn, manifestation 2 (neutralizing job strain) describes the positive connotation of one's excessive or unhealthy work practices in terms of hiding or consciously downplaying one's behavior. The specific factors triggering such different ways of communication or representations, which emerged from the conducted empirical study for this paper, are described in the following section.

*Compensation for own dissatisfaction / self-worth.* A misleading impression of unhealthy or excessive work behavior appears to be often conveyed to compensate for one's dissatisfaction or low self-esteem. For instance, interviewee 8 observed this in her professional environment:

> *I also have some people in my environment who are really only satisfied with themselves when they work 60 hours to 80 hours and even more. (Interview 8, item 45)*

Interviewee 6 also links the downplaying, defending or the embellishing of behavior to feelings of dissatisfaction with oneself, as illustrated by the following statement:

> *The feeling of not being able to achieve as much as others. That was certainly also the pressure to perform. (...) Certainly also a lot of self-esteem issues, the belief that if I don't achieve anything, I'm not worth anything. So a lot of compensation (laughs). Also in the group and with yourself. Yes. (Interview 6, item 58-59)*

*Opportunities for career advancement.* Perceived opportunities for career advancement also appear to constitute a trigger, albeit not a primary one.

For example, from a manager's perspective, respondent 5 noted that he perceives that communication is often deliberately adapted in front of him:

> *But with the individual team members, for example, it's definitely the case that when they see me and because they don't have the opportunity to see me and talk to me that often, they influence the image I have of them. Then I often have the impression that communication is consciously steered. (Interview 5, item 61)*

In similar terms, interviewee 9 also speaks of an embellished presentation of her work-related strain when talking to superiors, which again relates to potential future promotion opportunities:

> *My direct manager is constantly asking us what the situation is, what the workload is like. I honestly would not dare complain, I wouldn't say it's*

*terrible and I can't get anything done. But if there is too much work, then I would tell her. I'm sure about that. But then you have, or I would have in the back of my mind: Yes, you want to be promoted at some point or get another higher position. That doesn't look good, it looks more like you can't work under pressure. (Interview 9, item 81)*

<u>The conveyed standard in the professional setting.</u> A crucial trigger appearing in the professional context seems to be that respondents generally perceive excessive work attitudes, high levels of commitment or effort, and overtime hours as the standard in their given business environment. The fact that one's unhealthy work behavior is not presented in negative terms seems to be a logical consequence of this perceived norm for many. For example, three interviewees mentioned that everyone is "in the same boat" when talking to colleagues or fellow business students. This implies that the respondents are somewhat reluctant to complain about their job strain because they feel as if others in the same situation are able to cope well with high workloads, overtime, and stress. In order to not stand out negatively and feel a sense of belonging to such professional groups, overwork may be glamorized. The following statements underpin this line of argument:

*So I would say that among business students, or all those who take a similar career path, it's harder for me to say that it might even overburden me a bit, because it's somehow seen as the norm and preserves a bit of a good image if you get very involved in your work. (Interview 1, item 55)*

*Yes, generally among founders it is the case that you generally work a lot, and everyone is in the same boat. That's really normal, so to speak. (Interview 3, item 63)*

Similarly, respondent 6 shared her previous belief that stress and job strain were "part of the game" in her professional environment and names settings with this prevailing belief "toxic cycles." In the following statement, for example, she refers to this:

*"Yes, how are you?" is answered with "Yes, I'm so stressed, I'm so overwhelmed," that this is just quite normal in this environment. (Interview 6, item 53)*

Moreover, respondent 2 described his previous experiences in consulting and stated that overwork is an inherent part of the industry as a whole. Hence, he believes that honestly communicating the experienced strain or stress produced by excessive work behavior could have serious consequences or could even result in the loss of one's job:

*I think there was a tendency in consulting to communicate problems with the workload a little less. So there was more of a tendency to downplay it.*

*Simply because it was such an inherent part of the company, the corporate culture, and the industry that if you had pointed out problems here, that would really have been a bit of a "kick-out criterion", which simply made it difficult. (Interview 2, item 93)*

<u>*Professional or positive impression (image / self-marketing)*</u>. Closely linked to what was previously discussed, the respondents seem to strive to meet this perceived standard in professional settings to convey a positive impression of themselves. Interviewee 9, for example, explains this link:

*I think it's just because, in a way, in a professional environment, as you say, you also want to appear professional. (Interview 9, item 77)*

At the same time, the basic observation that it is also typical to talk in marketing terms, to self-market oneself within professional settings, was noted in Interview 1 (item 33) and Interview 5 (item 53). Similarly, the perceived necessity to always "show and shine" to achieve a better standing in professional spheres was mentioned in Interview 3 (item 79).

While these explanations focus primarily on the professional context, a few respondents also want to uphold positive images of their work behavior in their non-business surroundings. In this context, interviewee 3 (item 75) notes, for example, that he does not want to give the impression that work is all he has in life. To not come across as a "workaholic", he often portrays his work behavior or stress level as mitigated. In a similar vein, respondent 2 (item 87) mentioned that he often feels the need to justify his excessive work behavior around his non-work-related friends and family.

<u>*Avoidance of negative impact on others*</u>. Another decisive factor for the glamorization of overwork appears to be that one does not want to affect others negatively by sharing experienced difficulties and strain. In professional surroundings, this seems to be a particularly relevant trigger. For instance, interviewee 8 (item 76-77) shared her perception that fellow students would be unnecessarily impacted in a negative sense if feelings of being overworked were openly discussed. Moreover, managers seem to pay specific attention to avoid showing when work affects their well-being negatively, not to cause feelings of instability among their employees, or to transfer negative feelings to others. For example, the following statements demonstrate this:

*I think it's still important to be a bit more careful at work. Because if you are (...) if you are very dissatisfied, that also has a direct impact on the team or on the supervisor. (Interview 7, item 56)*

*So I wouldn't tell our team, even if I would not be doing well, I don't think I would tell the team. I just have such a high need for the team to simply feel good and also feel safe. (Interview 6, item 51)*

*There is always the "self-fulfilling prophecy", so to speak. If I now share things with colleagues out of*

*a momentary situation because I am annoyed by some fact, then the negative is reinforced and I do not want that to happen, because it does not really have the scope, but perhaps the emotion gives it more scope at the moment. (Interview 5, item 55)*

*Encouragement, appreciation, acknowledgement.* If respondents expect to receive praise or recognition for their high work efforts, they also tend to feel triggered to glamorize overwork. In this light, they seem to positively emphasize their excessive work behavior when communicating with managers and colleagues. Of course, this closely intertwines with other dominant stimuli discussed earlier, as this relates again to how the respondents are perceived within different social environments. The following statement from interviewee 4 underscores these explanations:

*And then there are the "chatterers" who reveal it quite openly and then also have the need to show how much they work. Whether they embellish it (...) a little bit is certainly always there. Of course, you want to have the recognition of your peers, so you either say I've worked so much, it's so great. Or if the mood is the other way around, that you say yes, okay, I managed this great project with little effort. Yes, it always depends a bit on the factors that also play a role here. (Interview 4, item 101)*

Another general observation that can be made in the professional context is that working too much is more likely to be perceived as laudable by others. Accordingly, this may also trigger an active emphasis on excessive work efforts:

*(. . .) someone telling me that I've worked too hard. At first, that is more likely to be understood almost as praise. (Interview 1, item 53)*

*On the other hand, something like that can very quickly turn into complaining, but also very quickly into pride, if you accomplish all these things and if you manage to do all of that. Yes, exactly. (Interview 9, item 77)*

4.7.1. The role of professional social media networks

Since professional surroundings may also be extended to the online world, the role of professional social media networks was also discussed. Indeed, the results show that the network LinkedIn is a crucial factor to consider. In this light, the respondents agree that embellished presentations of work situations, behavior, effort, or work-related achievements often occur. Interestingly, this happens mainly through inflated CVs. At the same time, the respondents also noted that this is not a LinkedIn-specific phenomenon but that the online social network simply offers more room for such embellished presentations. For instance, the following statement underpins these general perceptions:

*I don't really look at other people's resumes, but there is definitely a tendency towards falsely inflated CVs, in my opinion. And of course that's*

*encouraged by LinkedIn or Xing. I think the tendency would have existed even without that, but LinkedIn certainly encourages that. (Interview 2, item 105)*

Similarly, the following interview excerpt from interview 5 also helps to underscore this general perception. One may also note that this statement reveals a connection to the theoretical concept of the *triumph of emptiness* by Alvesson (2013) (view the discussion chapter 5.1.2 for further clarifications):

*As in private settings, of course, people tend to present a flawless and inflated image of themselves on social networks. Just as with the photos that you see on any Facebook profile or on Instagram, it is just so that it is more of a "shining" than a "being" on there. (Interview 5, item 67)*

Moreover, CV comparisons with other active people on the network appear to be quite common among some respondents, which often results in increased perceived personal pressure to perform:

*Pressure to perform in the sense of saying, click through on LinkedIn and then kind of see, wow, but he's already done the internships. Sure. That then also creates pressure that you also want to get better, want to do more amazing internships, whatever. It does. Yes (...), yes. (Interview 4, item 113)*

*It's the pressure to see, oh, this person has pursued a career, he's my age, I could achieve that too, what have I achieved so far? Of course, I've had this thought before. But I have to say that I had it more strongly before I did my Master's degree. When I saw which people did which Master's degree and which positions they got after which university. I let LinkedIn put a lot of pressure on me. (Interview 7, item 71)*

*I think it increases the personal pressure to pursue a career. Not directly pressure to perform or work pressure (...), but indirectly, of course. So if I have the ambition to build a career, I probably also have the desire to work harder. And by having this transparency "XY has started a new position here, XY has been promoted here" you always compare it more to your own career. (Interview 2, item 107)*

In addition to this, interviewee 6 mentioned that she perceives LinkedIn as a self-presentation tool and often finds herself conflicted about whether she should also engage in such behavior. For example, she stated the following in this context:

*That I think to myself, okay, is that somehow also part of self-positioning or positioning at all? Or*

*how much is then also self-staging? And how does that differ? And there's a fine line between, yes, I've just reached the next stage of my career, and then I'm the first to cheer and applaud and celebrate. But on the other hand, such small things are so incredibly inflated and that is incredibly annoying. Everyone is better and everyone has the craziest self-knowledge every day and everybody is better than others and that is really awful. (Interview 6, item 71)*

Thus, additional pressures originate from the respondents' virtual social surroundings.

### 4.7.2. The role of different social environments

At this point, it appears to be relevant to highlight the observation that different social environments may impact which manifestation of glamorization is more likely to be applied. In this light, professional settings seem to encourage the respondents to feel pride in their work behavior and, therefore, positively emphasize high work efforts or overtime (manifestation 1). Nevertheless, manifestation 2 may also occur, especially if the interviewees intend to convince their counterparts that their present stress level or workload is not taxing for them.

Contrarily, in non-work-related surroundings, the tendency to downplay one's work behavior seems to be more common (manifestation 2) to avoid having to justify oneself. For instance, interviewee 2 states that he would never brag about his work behavior in such settings:

*Not in my personal environment, no (laughs), I would see it more as shameful, okay shameful is a bit of an exaggeration. But there I would see it more as negative that I work more than 40 hours. So I see myself more in the position of having to justify why I work more. And I also see it that way, so I believe that you should never work more, overtime is not a good thing, yes. And in the professional environment, yes. I would not be ashamed of it there. (Interview 2, item 87)*

## 5. Discussion

This chapter discusses and links the previously presented results to the major theoretical concepts introduced in the literature review of this Master's thesis. In doing so, the proposed research question and its single sub-questions will be answered. In addition to this, the discussion will shed light on this paper's theoretical and practical relevance and implications, further show limitations, and give potential recommendations for future research.

### 5.1. Results linked to theory

After the findings have been rolled out in great detail in the last chapter, this thesis now intends to uncover selective connections to theory. Thus, the empirical findings will be linked to the most fundamental theoretical models presented in this paper, namely the JD-R model (Bakker & Demerouti, 2007) and the notion of the *triumph of emptiness* (Alvesson, 2013). Hence, it is not the aim of this work to compare and contrast the entire literature review with the results of this study but to reveal significant implications for the most relevant streams of literature.

### 5.1.1. Contributions to the JD-R model

The central framework used for this paper is the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007), which plays a crucial role in the attempt to explain what stimulates or favors excessive work behaviors (research sub-question 1). In this light, the correlations between job demands and resources postulated in theory (see, e.g., Bakker & Demerouti, 2007, pp. 313–314) were confirmed in the study of this paper: both resources and demands could embody motivators and strain at the same time, depending on the given balance.

While the JD-R model was considered particularly useful in explaining the development of job strain or motivation, with the former being related specifically to overwork according to the understanding of this thesis, there is a need for both enriching and extending the concept according to the studied subject of investigation. Since individuals in the pursuit of managerial careers are at the center of attention of this thesis, the theoretical model is, on the one hand, profoundly enriched with empirical findings applicable to this specifically investigated career path. On the other hand, the model is supplemented with further dimensions for this paper, which were also found to significantly impact the development of overwork but cannot be fully framed into the existing elements of the theoretically proposed concept. Figure 8, displayed further below, shows an attempt to merge the JD-R model with empirical results.

While, in general terms, empirical evidence for the Job Demands-Resources model is abundant (Schaufeli, 2017, p. 121), the dimensions of the JD-R model can be enriched with empirical findings specifically for the investigated context. As visually depicted in figure 8, specific job demands that proved to be cognitively, emotionally, socially, or physically challenging for respondents could be identified in this study. When considered independent of available resources, these demands appear to be the primary cause of job strain in pursuing managerial careers. Moreover, relevant resources stemming from different job-related aspects also play a dominant role. More specifically, job resources relevant for individuals pursuing managerial careers can be found in social settings, on the task level and the broader organizational level. Additionally, they also emerge through the organization of work or on the non-organizational or personal level.

In the attempt to link the JD-R model to the achieved empirical results, the theoretical concept shows potential to be extended, particularly when it is applied to make sense of the development of excessive work attitudes. Hence, based on the findings of this paper, one could argue that the standalone dimensions of the JD-R model (namely, resources and
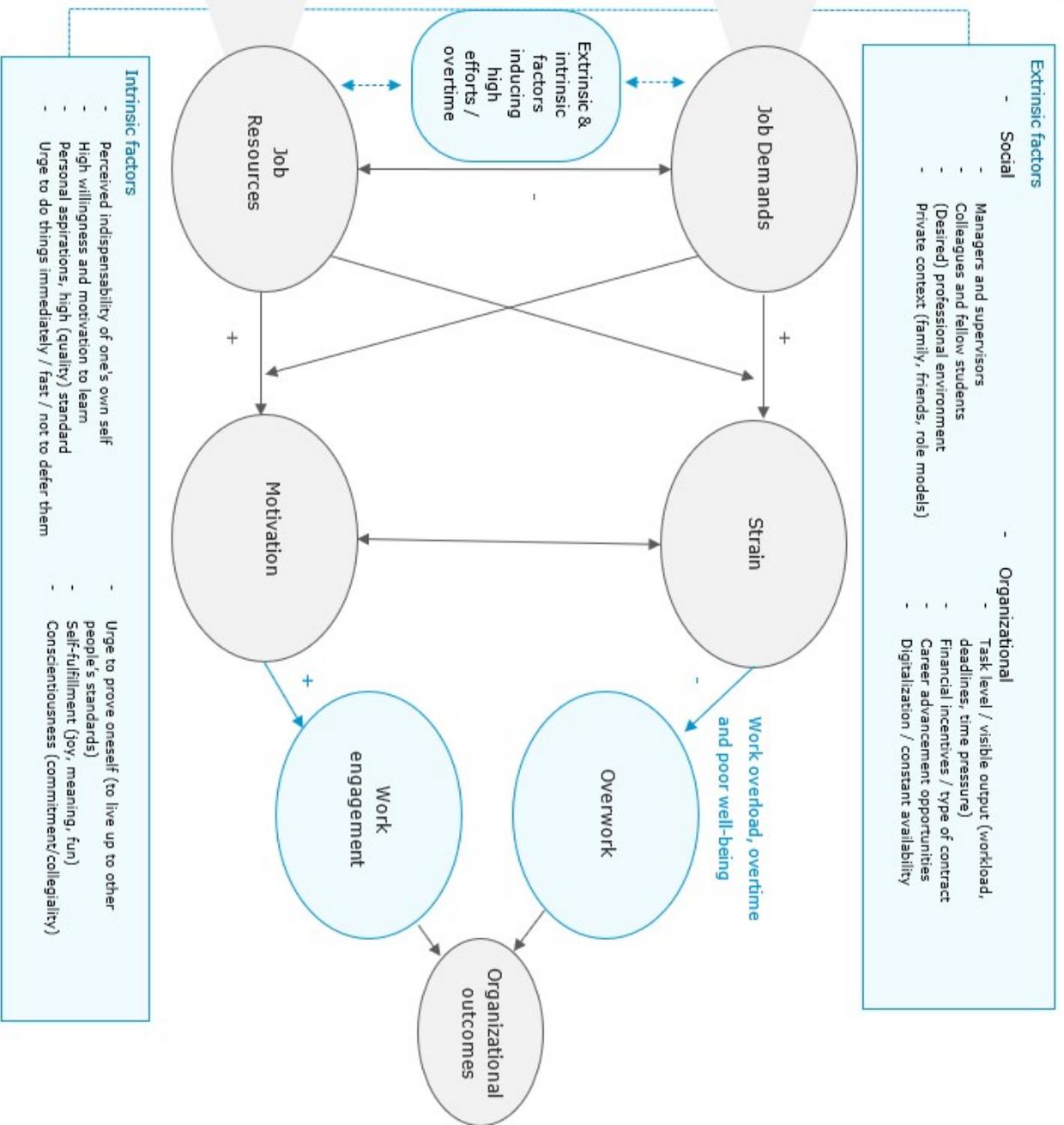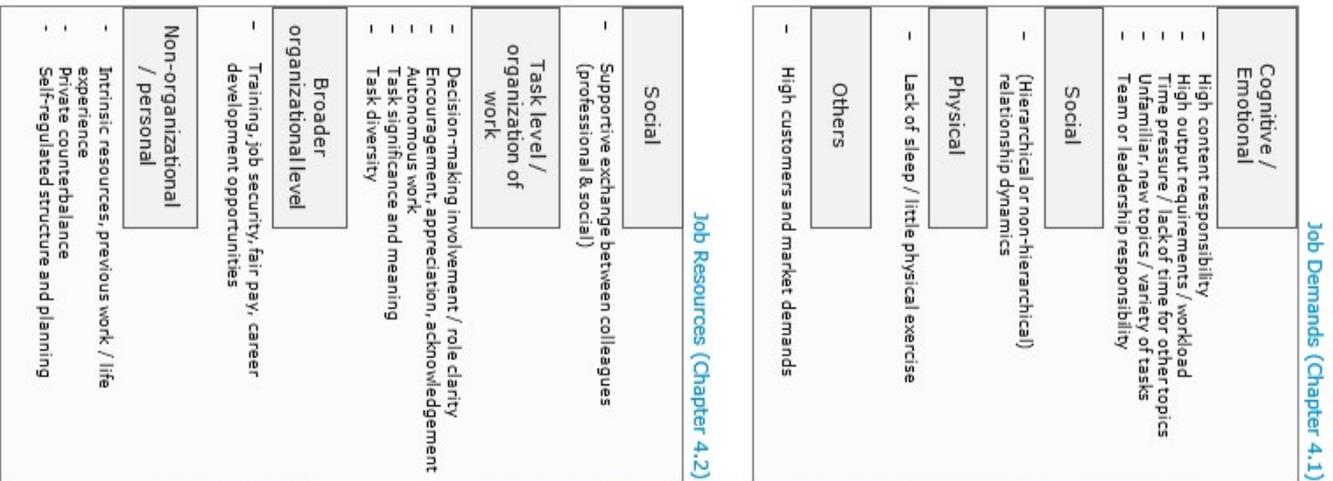
**Figure 8:** Adaption of the JD-R model (Bakker & Demerouti, 2007, p. 313) according to empirical results and the study context. Own compilation.

demands) are not sufficient to explain what stimulates or favors the emergence of excessive work attitudes but instead primarily show how job strain or poor well-being develops. However, overwork is mostly also associated with working long hours (Burke & Cooper, 2008, pp. 74–75). Therefore, also reasons exposing why overtime hours are commonly worked should be considered in order to achieve a holistic view. In this regard, similar to what literature postulates, individual work values (see, e.g., Mazzetti et al., 2020, p. 3) and the role of social settings (see, e.g., Burke & Cooper, 2008, p. 102; Sussman, 2012, p. 5) appear to be of significant importance in the attempt to understand the development of excessive work behavior in the pursuit of managerial careers. Thus, in addition to the previously outlined enrichment of the model, including new dimensions appears to be crucial to answering sub-question 1 adequately. The dimensions specifically added and framed into the Job Demands-Resources model for the context of this thesis are highlighted in blue in figure 8. While the boundaries between the existing aspects and the newly added dimensions of the model blur, it is still essential to distinguish between these influencing factors and to consider them separately.

As visible in figure 8, extrinsic factors are added, which act as a trigger or incentive for respondents to devote such high work efforts and/or to be willing to work overtime. Such extrinsic motives arise, for example, through interactions with colleagues, fellow students, or managers, but also appear in private social settings. Moreover, influencing factors are located at the broader organizational level (see chapter 4.4). Hence, what is meant here as an extrinsic influencing factor may simultaneously represent a job demand but not necessarily does so. Instead, the extrinsic factors are primarily considered triggers for long working hours and high work efforts. Similarly, intrinsic factors (see chapter 4.3) were also found to be highly relevant for the development of excessive work behavior and are therefore integrated into the existing JD-R model. For instance, the intrinsic desire to take care of assigned tasks immediately instead of deferring them appears to be a crucial personality-related intrinsic factor that is not considered by the existing theoretical concept.

Another extension becomes apparent on the right end of the visually displayed JD-R model. Here, *overwork* and *work engagement* were added to facilitate the interpretation of the concept in the context of this thesis. As already highlighted in chapter 2.4.1, Bakker and Demerouti (2007, p. 313) state that dual processes may lead to job strain or motivation. According to the definition of overwork in this paper, the state of being overworked can therefore be seen as the result of the postulated health impairment process. Contrarily, the motivational process is likely to result in a state of work engagement. The latter adaption, thus, the supplementation of the model with work engagement, is already proposed in several streams of literature (Schaufeli, 2017, p. 121).

Furthermore, the empirical study also assessed whether *overwork climates,* according to the understanding of Mazzetti et al. (2016), exist in the respondents' work environments. Therefore, a clear link to existing theory is also evident in

this regard. However, one could argue that these findings (see chapter 4.5) have a somewhat overarching character and are therefore reflected in the dimensions of the JD-R model, making their integration redundant.

**Interconnection between different dimensions**

The following section aims to facilitate the understanding of the interplay between the individual dimensions of the JD-R model, including their supplemented dimensions. In doing so, it attempts to disentangle the demonstrated results and explain their relationships to one another.

First, as Bakker and Demerouti (2007, p. 312) also suggested, job demands and job resources are closely interconnected. Nevertheless, to identify all relevant aspects, the prevailing job resources and demands within the respondents' work environments were addressed separately in the empirical interviews. However, the data analysis process clearly showed that these individual dimensions (i.e., resources and demands) should not be considered completely independently of one another, as they may take on both roles. Therefore, these interaction effects and the different potential outcomes (i.e., motivation vs. strain) made assessing single job demands and resources within the respondent's work settings highly complex. To make this observation more tangible, let us consider an example from the data set. Interviewee 7 (item 23), for instance, noted that time pressure (= job demand) is generally perceived as an incentive and usually spurs her on. Thus, this clearly shows that job demands can also have motivational potential when bundled with specific resources. Conversely, another example illustrates a similar effect as far as resources are concerned: In this light, this study found that task variety, although generally considered a job resource, may also have a straining effect. For example, Interviewee 1 (item 29) noted that she does not perceive this aspect as beneficial, but she mostly feels that task variety instead contributes to the perceived overload. In other words, the results of this paper also clearly show that job resources may have a taxing effect on individuals.

As noted on several occasions, overwork is mostly but not always associated with long working hours (see, e.g., Burke & Cooper, 2008, p. 65,74-75). However, all respondents included in the sample indicated that they regularly devote overtime hours to their jobs, which allowed room to assess why they felt the urge or pressure to do so in the first place. While high job demands largely already imply long working hours, other intrinsic and extrinsic factors were also found to be relevant to consider. The following figure intends to ease the understanding of this interplay and reduce the complexity of the discussed links between the single aspects tackled in this paper:

To illustrate the interconnection between these single dimensions, consider, for example, the influence of colleagues within social settings. For one thing, colleagues were found to often transmit high job demands on others, for instance, through demanding expectations. Considered individually, this demand may have a reinforcing effect (+) on job strain
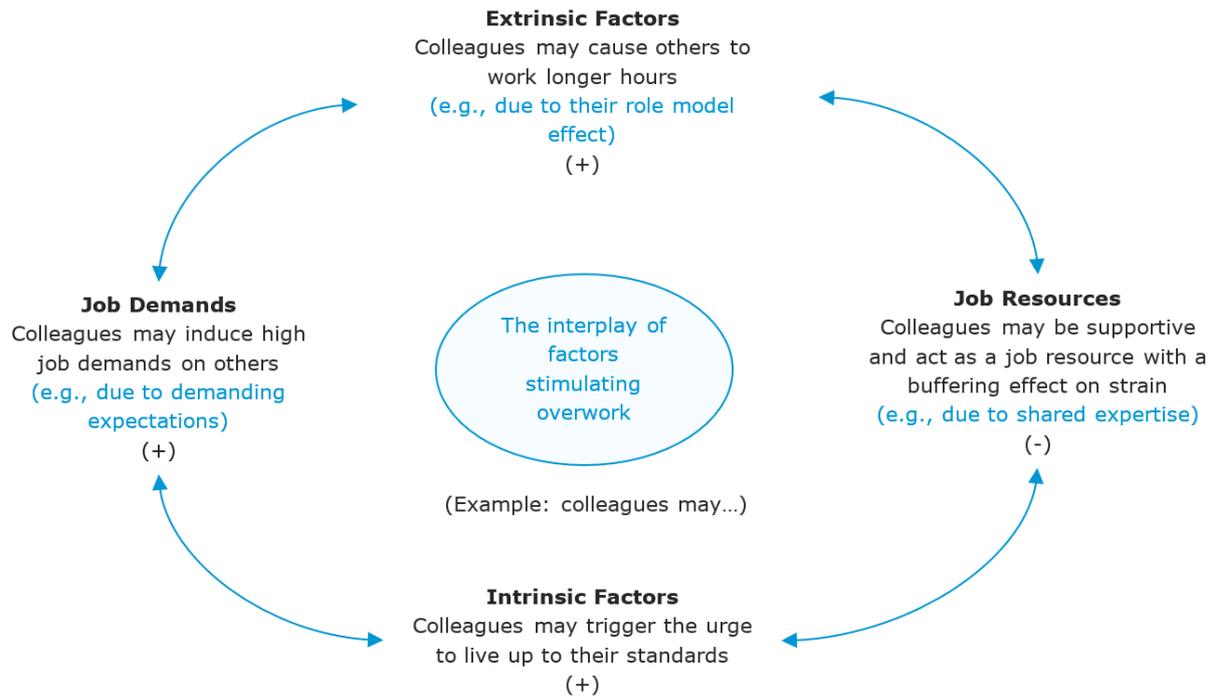
**Extrinsic Factors**
Colleagues may cause others to
work longer hours
(e.g., due to their role model
effect)
(+)

**Job Demands**
Colleagues may induce high
job demands on others
(e.g., due to demanding
expectations)
(+)

The interplay of
factors
stimulating
overwork

(Example: colleagues may…)

**Job Resources**
Colleagues may be supportive
and act as a job resource with a
buffering effect on strain
(e.g., due to shared expertise)
(-)

**Intrinsic Factors**
Colleagues may trigger the urge
to live up to their standards
(+)

**Figure 9:** Interplay between factors stimulating overwork, using the example of influence through colleagues. Own compilation.

and thus, stimulate overwork. Nevertheless, the support of colleagues was also found to be a crucial job resource for the majority of respondents. For instance, shared expertise or knowledge was perceived as extremely helpful in the face of high demands. In this sense, colleagues have a buffering effect on job strain and may reduce the likelihood of overwork (-).

Although or perhaps because colleagues appear to be significant resources within organizational settings, they often have a role model effect on others. If excessive work behavior is observed, this could thus lead to mirroring of behavior and, in turn, lead to the unconscious promotion of overwork among colleagues (+). In addition, intrinsic factors should be considered, as they were also found to evoke the motivation for excessive work attitudes among the respondents. In the illustrated example, the urge to live up to the standards or expectations of colleagues constitutes a crucial stimulus for overwork (+). Although especially this intrinsic factor intertwines extremely closely with perceived demanding expectations (job demands), it nevertheless contains standalone importance. After all, one cannot assume that high job demands triggered by colleagues automatically generate the urge to fulfill them.

Nevertheless, one should bear in mind that figure 9 merely represents an example to illustrate the interrelationships and the complexity of single stimuli or influencing factors. Thus, this demonstrated interplay is not only applicable for the given example of relationship dynamics with colleagues but also other stimuli to overwork. The findings chapter makes several remarks in this regard. The extent

to which these single dimensions influence excessive work behavior is found to strongly depend on the given organizational or team setting, the situation, and the concerned person itself, including his/her intrinsic motivation and values.

5.1.2. Contributions to the triumph of emptiness

This thesis is further concerned with investigating how the glamorization of overwork arises from heavy work investment in the pursuit of managerial careers (research subquestion 2). In this respect, chapter 4.7 sheds light on the empirical results and visualizes the depicted relationship between the single influencing factors. Hence, as already presented in the findings, specific stimuli within the professional and non-profession environments may trigger the glamorization of overwork, with the respective individually perceived level of familiarity and trust to one's counterpart acting as a moderating factor. In turn, if high levels of familiarity and trust are present, the glamorization of excessive work behavior does not seem to occur.

As outlined in the literature review, the second central theoretical concept used for this Master's thesis is the notion of the *triumph of emptiness* (Alvesson, 2013). Indeed, the empirical results confirm in several aspects that Alvesson's ideas can be applied to the context of overwork. In addition to this, the findings of this paper show that Alvesson's manifestations of the *triumph of emptiness* should also be extended to the virtual context for the present subject of study. Thus, as Alvesson's notion traces back to the year 2013, the role of online platforms such as LinkedIn was arguably much less

significant than in today's world, which may explain why the author fully avoids including such aspects into consideration. However, given the enormous reach of LinkedIn (LinkedIn, n.d.), one may argue that *grandiosity, zero-sum games,* and *illusion tricks* take on a much broader dimension than initially postulated. Nevertheless, the glamorization of overwork on such online platforms happens largely in an indirect manner, by drawing comparisons with other professionals. The following section will explain how the single theoretically proposed manifestations of the concept link to the findings of this paper.

*Grandiosity*

According to Alvesson (2013, p. 8), the most important theme of the overall concept is *grandiosity*. As already explained in chapter 2.5.2, this manifestation is characteristic of our modern society, at least in the author's understanding. Thus, according to Alvesson (2013, pp. 8–9), attempts to glorify circumstances, situations or facts, to portray oneself in the most appealing or attractive way possible, are typical. Interestingly, several respondents referred directly to this notion by implying that embellishment is something they frequently encounter, not only related to work behavior but in principle. Accordingly, also the proposed links between the glamorization of overwork and *grandiosity* suggested in chapter 2.5.2 were clearly shown.

Moreover, the findings of this thesis reveal that what Alvesson (2013, pp. 8–10) describes as *grandiosity* also appears frequently on LinkedIn. In this light, respondents referred to individual postings or job position descriptions. For instance, a respondent indicated that *grandiosity is* anticipated as somewhat typical behavior in the off- and online world (view direct quote in findings chapter, page 62, Interview 5, item 62). In short, one could therefore argue that the glamorization of excessive work attitudes is partly due to the fact that *grandiosity* is simply a prevalent phenomenon in our society and thus, occurs in general terms, regardless of context.

*Zero-sum games and illusion tricks*

The in chapter 2.5.2 anticipated relationships between Alvesson's *zero-sum games*, *illusion tricks* and the glamorization of overwork were also largely confirmed by the empirical data. Since both manifestations appear to be heavily interwoven in practice, they will be discussed jointly in the following section.

For one thing, the results indicate that respondents feel strongly influenced and pressured by the career steps and achievements of others. Thus, in Alvesson's understanding (2013, p. 4), this is due to *zero-sum games*, as personal utility or satisfaction is measured in relation to others. In this context, LinkedIn seems to play a crucial role, as the social network makes comparisons of one's own achievements and career path in relation to others possible in the first place. Moreover, as already disclosed in the findings (see chapter 4.7.1), such a "CV benchmarking" seems common in the pursuit of managerial careers and typically results in high personal pressures to achieve similar outcomes.

Closely linked to this, the results indicate that Alvesson's concept of *illusion tricks* (2013, pp. 15–16), mainly in the form of inflated CVs, is also often employed on LinkedIn. In this regard, a particularly interesting finding associated with both manifestations of Alvesson and the social network should be pointed out: While the general perception is not that work efforts appear to be explicitly emphasized and glamorized, posted career steps or achievements of others seem to cause stress for many, despite their apparent awareness that much of the visible content is substantially inflated. Overall, this may, therefore, also contribute to the feeling of overwork or promote excessive work behavior among such individuals. Thus, a negative reinforcing effect may be assumed, especially due to the glamorization of overwork.

In this context, another noteworthy observation should be mentioned. Although a scale detecting workaholism was used prior to the interviews and hereby achieved scores of respondents imply that there a tendency towards a somewhat unhealthy work behavior exists, the well-being and workload of the interviewees were not communicated as something overly negative (also view chapter 4.6). In turn, this may result from self-deception, which according to Alvesson (2013, p. 18), closely links to *illusion tricks.* Relating to this, literature agrees that workaholism entails that those affected are largely in denial of their problematic behaviors and commonly fail to recognize their work patterns in negative terms (Cooper, 2016, p. 109; Peiperl & Jones, 2001, p. 375). Hence, if workaholics unconsciously deceive themselves through the use of *illusion tricks*, to the extent that they put their excessive work efforts in a positive light or view it as markers of their professional success while ignoring the negative consequences they are affected by, one may debate that they may likewise be disposed to deceive others. Based on this reasoning, the glamorization of overwork may therefore be self-deception in the first place, and accompanying this, those affected may be prone to mislead their social surroundings, possibly without any bad intentions.

5.2. Relevance and practical implications

This Master's thesis provides clear evidence on the causes of overwork and the triggers for the glamorization of heavy work investment towards others, specifically in managerial careers. Therefore, the findings add to the body of literature in the areas of workaholism, work addiction, and related fields. More specifically, research conducted for this study contributes to filling several gaps in research. As theoretical developments on the origins or antecedents of workaholic behavior are still lacking (Burke & Cooper, 2008, p. 61; Douglas & Morris, 2006, p. 394), particularly in specific areas such as the socio-cultural context of those concerned (Mazzetti et al., 2020, p. 13), the closer investigation of this study appears highly relevant. Moreover, the research interest in the glamorization of such overwork behaviors remains virtually unaddressed in present literature, mak-

ing the empirical and theoretical contributions of the Master's thesis particularly valuable. Thus, the first novel contribution of the paper is the detailed identification of the relationships between different causes of overwork, including intrinsic personality-related triggers and extrinsic or environmental factors. In this light, one can summarize that these aspects collectively determine workaholism. Furthermore, the given explanation of why workaholic behaviors may be publicly glamorized represents the second major contribution to existing literature.

This paper has several practical implications for individuals in management positions (managers) and those aspiring to pursue this career path. By understanding the causes of overwork, measures towards avoiding such behaviors may be taken in organizational settings. Thus, the thesis provides detailed information on the conditions and aspects in the organizational or socio-cultural context in and outside firms that have extremely amplifying effects in promoting unhealthy work practices. Since the empirical investigation of the Master's thesis was dedicated to individuals working in or currently pursuing managerial careers, implications also become visible on a job-specific level, meaning that job demands inducing overwork and job resources, reducing the costs of workaholic behavior, were identified.

Therefore, anticipated recommendations for managers that can be derived from the contributions of this thesis are expected to help them build organizational settings that positively foster work engagement but have an adverse effect on unhealthy work attitudes. Similar implications have already been established by previous research. For instance, Binkley and Levine (2019, pp. 491–492) introduced several factors managers can leverage to build burnout-resistant work environments. Thus, this thesis also adds to the existing body of research in this regard.

Furthermore, reasons that could lead other managers to glamorize overwork can be identified and – at least to a certain extent – averted at an early stage based on the demonstrated results. Thus, this study's findings help prevent such unhealthy behavior from having an exemplary effect on other people or from being imitated within one's social environment.

### 5.3. Limitations and recommendations for future research

Overall, this Master's thesis focused on the downside of high work efforts and discussed theoretical and practical implications primarily on its negative side. In this respect, the basic idea of this thesis is to filter out the major influencing factors that lead to strain or negative well-being (= the state of being overworked) to potentially provide starting points for change. Therefore, the awareness of factors contributing to overwork may also help to foster the positively connoted work engagement. However, this thesis does not tackle the concept of work engagement in the necessary depth - neither theoretically nor empirically – to allow conclusive statements about its development per se. Although the adapted JD-R model (view figure 8) includes work engagement as a dimension, one must still consider that this paper primarily explains

the development of unfavorable work behaviors. Moreover, the concept of work intensification remains practically unconsidered in this thesis, apart from its brief description in chapter 2.2.3. However, the empirical results show that high workloads appear to influence overwork significantly, which closely relates to work intensification (Bunner et al., 2018, p. 2). Consequently, future research could devote more attention to both work engagement and work intensification in their studies, considering these limitations.

Furthermore, as far as theoretical concepts are concerned, the findings of this Master's thesis would have also allowed being linked to the Job Characteristics Theory (JCT) by Oldham and Hackman. The core proposed job characteristics of the authors' approach (i.e., skill variety, task identity, task significance, autonomy, job-based feedback) contribute to the perceived meaningfulness of work (Oldham & Hackman, 2010, p. 464). Interestingly, they can also be found in this study's findings. Here, they mostly constitute job resources, buffering the experienced job strain. Like the role of job resources in the JD-R model (Bakker & Demerouti, 2007, pp. 313–315), the JCT assumes that these characteristics ultimately motivate individuals to perform their jobs (Oldham & Hackman, 2010, p. 465). Likewise, the Self-Determination Theory (SDT) (Gagné & Deci, 2005) could have also been considered in view of this study's findings, especially since both intrinsic and extrinsic incentives or triggers for overwork and its glamorization were identified. Generally speaking, the SDT distinguishes between two forms of motivation, namely autonomous and controlled motivation. The theory refers to the fact that behavior can be clustered into different categories, depending on whether the motivation stems from a voluntary and intentional background (autonomous) or whether it is controlled and, thus, primarily influenced by extrinsic factors. For instance, the SDT postulates that behavior can be externally regulated, meaning that it is fully induced and maintained by external factors or events (Gagné & Deci, 2005, pp. 333–334). Hence, future research is encouraged to address these conceptual linkages to the JCT, the SDT, and potential other theories of work motivation. This would further allow for a theoretical condensation of the results of this thesis.

In a similar vein, the limited scope of this thesis did also not allow for a close investigation of gender or cultural differences. Nevertheless, associated factors such as the family situation or cultural imprints may play a significant role in overwork. While one may argue that the empirical study conducted for this thesis indicates that specific differences between men and women do exist, these are merely assumptions. Consequently, future research could also address these issues.

In addition to limitations concerning the scope of this Master's thesis, the empirical investigation conducted should also be critically reflected. While the sample size itself proved to be sufficient, one may criticize the fact that different subsamples emerge due to the two distinct included perspectives (i.e., of Master's students in the pursuit of managerial careers vs. individuals actively pursuing managerial careers). This

again implied that the respondents for the empirical study were facing different career stages. However, this may indeed be a crucial factor to consider. For instance, one may assume that opportunities for career advancement or promotions may not be as relevant at a relatively mature career stage or age. At the same time, they may significantly influence students at the beginning of their career ladder. Furthermore, one should note that not all interviewees faced active managerial responsibilities due to the inclusion of students in the sample. Although qualitative research generally does not intend to achieve the generalizability of statements, one may acknowledge that the inclusion of these two perspectives made it difficult to draw broader conclusions.

Moreover, the empirical study did consider the respondents' working environment characteristics (e.g., startup vs. corporate group) or the given organizational or team structures (e.g., hierarchical structure, size). On the contrary: the sample consisted of individuals with various backgrounds, which may also be viewed as a limitation. Hence, one could assume that more accurate results could be obtained if the context is limited to one specific organizational structure, industry, or respondent's position and the sample criteria are adjusted accordingly. Moreover, by pre-specifying such individual circumstances, one could further ensure that similar influencing factors impact the respondents (e.g., similar power structures) and that similar career paths are being pursued. Indeed, the conducted interviews showed that such clustering is reasonable. While some respondents, for instance, were occupied in organizational settings where they actively had to work their way up to management positions within existing structures, two interviewees reached their managerial positions due to the co-founding of startups. Consequently, future research is recommended to investigate these subgroups independently, according to career maturity or generation, work environment, industry, or organizational structure.

Additionally, one must again emphasize that the topic itself is somewhat sensitive and may have presumed respondents to expose a vulnerable side. While this also made it challenging to recruit interview partners in the first place, a limitation also emerges in this respect. Thus, as already emphasized previously in this paper, overworked individuals are often unaware of their unhealthy behavior (Cooper, 2016, p. 109; Peiperl & Jones, 2001, p. 375). Therefore, one may also assume that they might struggle to be self-reflective when discussing the issue. In this light, one could further argue that this also applies to the respondents in the sample. Moreover, if interviewees had an overall tendency to glamorize their behavior, they might also have consciously or unconsciously glamorized or downplayed their work efforts when being interviewed.

Finally, future research should consider tackling this topic in broader studies. For example, an accompanying observation of individuals over the course of multiple years would allow a better objective assessment of the demands and stress levels they are facing. Although stressful work situations were also discussed in this study's interviews, one may assume that the assessment of the respondent's personal well-being at the time of such taxing situations is somewhat distorted due to the progression of time.

## 6. Conclusion

Whereas assessing the reasons and causes behind the development of overwork behavior proved to be highly complex, given the extensive range of research that could have been linked to the phenomenon, this Master's thesis aimed to provide evidence of crucial influencing factors on overwork and its glamorization. In this light, it is argued that the interplay of the closely intertwined job demands, job resources, and further intrinsic and extrinsic factors lead to the state of being overworked in the pursuit of managerial careers. Here, the JD-R model (Bakker & Demerouti, 2007) serves as a fundamental concept, with the single theoretically proposed dimensions being condensed and extended with relevant factors specifically applicable to the context of this study.

Apart from specific job characteristics, one's social setting within professional spheres seems to have a powerful influence on behavior. Since relationship dynamics occurring in such settings may lead to imposed demands or a perceived need to conform to peers, excessive work attitudes are likely to result. However, the role of one's social environment may also be a supportive one, meaning that relationship dynamics also serve as crucial resources. In addition, this paper finds that also personality-related intrinsic factors significantly influence the development of overwork behavior. Figure 8 summarizes these findings and their interconnection with the JD-R model.

As far as the glamorization of overwork is concerned, novel explanatory approaches and observations emerge from this Master's thesis. First, it could be shown that two different manifestations of glamorization can be distinguished. While excessive work behavior is primarily emphasized and associated with pride within professional surroundings (i.e., one's workplace or academic environment), there is a tendency to hide or neutralize work behavior within personal settings. Second, the results indicate that the glamorization of overwork behavior strongly depends on perceived trust levels. In fact, high-trust settings, occurring in the professional and non-professional context, foster honest communication and rarely glamorization. Figure 7 outlines how the glamorization of overwork may arise from heavy work investment, especially in pursuing managerial careers. Since the role of the glamorization of overwork is rarely addressed in academic spheres and may therefore be underestimated in the current literature, the uncovered results appear particularly valuable.

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# Determinants and Capital Market Consequences of Net Zero Targets

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**Abstract**

Net zero emission - Recently, a frequently cited climate target in the corporate sector. Meeting public pressure, gaining reputation, and optimizing resources are among the core motivations to pursue such a target. Opposed to this stand a high level of complexity and costs. Thus, from an investor's view, an assessment of profitability can be mixed. Moreover, the risk of greenwashing renders it challenging to assess the sincerity of such a target. The goal of this paper is twofold. First, I analyze which firm and industry determinants might explain net zero target announcements by Russell 1000 listed companies. Second, I measure the capital market reaction by means of an event study and examine the influence of target characteristics defined within a purpose-developed ESG score. The results reveal a significant correlation between a variety of determinants and a net zero target announcement (e.g., industry profile, firm size) and show a significant negative capital market response irrespective of a target's individual attributes. The latter result indicates a general skepticism of investors towards net zero pledges. I conclude that enhanced external enforcement options and greater transparency by companies regarding their actual target realization plans may reduce this skepticism.

*Keywords:* Net zero; Carbon neutral; Climate target; Determinants; Capital market consequences.

## 1. Introduction

*"Further and Faster, Together"* (Amazon, 2021, 1)

This is the slogan Amazon adopted when it published its 2020 sustainability report reaffirming its goal of reaching net zero carbon emissions by 2040. To realize this target, Amazon co-founded "The Climate Pledge" initiative in 2019. A commitment aimed at cross-industrial partnership to combat climate change. With now, more than 100 subscribed companies from sixteen different countries and 25 industries, the initiative has experienced strong growth since its inception (Amazon, 2021, 16). However, The Climate Pledge is not the only initiative that has seen a significant increase in collaborators. The Science Based Targets initiative (SBTi), a partnership of the Carbon Disclosure Project (CDP), the

United Nations Global Compact, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF), intended to guide emission reduction targets in the private sector, has also seen a surge in signatures. Since its foundation in 2015 as a result of the Paris Climate Agreement adopted at the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change, more than 1,000 companies have committed to emission reduction targets validated by the SBTi. In the period from November 2019 to October 2020, 370 companies joined the initiative, doubling the preceding rate of new signatures (SBTi, 2021a, 2–5).

These two examples clearly show that, as also suggested by Flammer (2013, 758), environmental responsibility is gaining importance in the corporate sector. According to the SBTi (2022), in particular, net zero targets have rapidly become mainstream endeavors. In addition to Amazon, other well-known companies such as Apple and Microsoft committed to achieving a net zero (carbon neutral) status. While Apple is committed to carbon neutrality by 2030 (Apple, 2020), Microsoft pledges to become carbon negative by 2030 and also to neutralize all emissions ever emitted in the

past by 2050 (Microsoft, 2020).

However, according to the Intergovernmental Panel on Climate Change (IPCC), this development in the corporate sector is indeed a necessity. In its most recently published sixth assessment report, "AR6 Climate Change 2021: The Physical Science Basis" the IPCC states that limiting global warming to a certain level requires at least a reduction of cumulative anthropogenic carbon dioxide ($CO_2$) emissions to net zero together with significant mitigation of other greenhouse gas (GHG) emissions (IPCC, 2021, SPM-36). And in 2018, in its special report on "Global Warming of 1.5°C", the panel already pointed out that this has to be achieved by around 2050 in order to avoid global warming overshooting 1.5°C and thus catastrophic consequences (IPCC, 2018b, SPM-12).

In conclusion, public pressure on companies to initiate activities to combat climate change has increased in recent years. Nevertheless, private net zero pledges are still voluntary (Lin, 2021, 16) and while a company certainly has several motivations to follow the market movement, such a commitment also comes with drawbacks. On the one hand, net zero pledges might be motivated, similarly to environmental governance in general, by "a mixture of efficiency, resource supply, competition, and reputational goals that can all be squared neatly with profit maximization, along with altruistic preferences or norms by managers, shareholders and customers" (Vandenbergh, 2013, 180). More specifically, net zero engagements may lead to more energy-efficient operations, improved morale of the employees, an enhanced reputation, and finally address pressures from external stakeholders such as customers, investors, and lenders (Vandenbergh & Gilligan, 2017, 138–53). On the other hand, however, a drawback of implementing a net zero emissions strategy is the high amount of costs associated with it. According to McKinsey (2022), a worldwide additional annual spending of $3.5 trillion on physical assets is required on average to reach a net zero economy. This corresponds to about half of the world's corporate profits. Thus, companies have several motivations to pledge net zero emissions, but probably fewer to achieve them (Lin, 2021, 23). This poses the threat of greenwashing. Net zero targets might just act as empty promises misleading consumers about actual environmental performances in order to contradict regulatory and market-related pressures (Delmas & Burbano, 2011, 66–68).

Having this in mind, from an investor's perspective, it is further quite challenging to evaluate net zero targets in their meaning. While these require, among other things, significant changes in existing production processes, transportation modes, as well as energy and economic systems (Lin, 2021, 3), they often lack precise terminology and implementation information (NewClimate Institute & Data-Driven EnviroLab, 2020, 1). Also, net zero targets can vary in their actual level of ambition and comprehensiveness. They can differ in their target timeline, can cover merely own operations or the entire supply chain, or can be narrowed down on specific regions or products (Watanabe & Panagiotopoulos, 2021, 6). Concluding, from an investor's perspective, it is not only the

sincerity but also the actual meaning of the targets that are of critical matter.

Based on these considerations, the research questions to be answered within this study are, first, to determine which firm- and industry-specific determinants and motivations relate to the publication of net zero or carbon neutral targets, which I consider synonymously within this study, and second, to what extent investors are sensitized to these. More specifically, the objective of the second part is to examine the investors' awareness on the targets by measuring the capital market reaction upon their publication in general and to investigate whether certain content-related characteristics of the announcements impact investors' capital allocations.

Because of this two-part structure of the research question, the study builds on two somewhat different strands of literature. First, the one that identifies determinants of voluntary Corporate Social Responsibility (CSR) reporting (e.g., Belkaoui & Karpik, 1989; Cormier, Magnan, & Velthoven, 2005; Reverte, 2009; Gamerschlag, Möller, & Verbeeten, 2011) and second, the one that establishes a relationship between CSR activities and financial performance (e.g., Hamilton, 1995; Klassen & McLaughlin, 1996; Flammer, 2013; Krueger, 2014; Capelle-Blancard & Petit, 2019).

While certainly environmental CSR is an already studied topic in these contexts, due to the recency of corporate efforts towards net zero emissions none of the previous work has, to the best of my knowledge, addressed this very specific topic so far. Also, in contrast to foregoing research which covers determinants and consequences of CSR disclosure mostly individually (e.g., Reverte, 2009, Krueger, 2014) I analyze both and thereby provide a comprehensive picture on this subject.

To identify determinants of net zero targets, I use a binary logistic regression model. The dichotomous dependent variable corresponds to the value 1 if a company in the US index "Russell 1000" has published such a target in the period from the beginning of 2019 to mid-2021. As independent variables, I use firm and industry-specific characteristics already found to correlate with CSR reporting in previous literature. In total, I find seven with net zero pledges significantly correlating determinants, namely, a company's country profile, industry profile, firm size, degree of innovation, financial constraints, board size, and finally past environmental performance.

In the second part of the study, I then examine the investors' awareness on net zero targets by measuring the capital market consequences. Without going into more detail on the specific content of the targets, I first examine the awareness of investors in general. For this purpose, I use an event study methodology and determine the cumulative abnormal returns over a period from one day before to five days after the target publication. Following the event study, I then compare the climate pledges in more detail using a customized Environment Social Governance (ESG) score. The ESG score includes variables to measure the level of ambition and seriousness of the targets, as well as formal characteristics of the associated announcements. I test these ESG score variables in a multiple linear regression model as potential drivers of

the calculated cumulative abnormal returns. Thereby, the significant determinants from part one function as control variables in order to separate the market effect of the disclosure caused by firm or industry characteristics from the actual content. The results of the event study allow for the conclusion that investors seem to be aware of net zero targets and to evaluate corresponding ESG investments as not profitable, at least in short term. The cumulative abnormal returns deviate significantly negatively from zero by -0.839%, on average. However, none of the as benchmark used ESG score variables seem to explain any variation in the cumulative abnormal returns. Consequently, one might assume that investors are more concerned about the fact of the target setting itself than about specific details or do not regard target specifications to be reliable. Considering the latter potential explanation, this study implies the requirement of mechanisms to increase the reliability or trustworthiness of net zero targets.

The results of my work further create a need for future research. In particular, the long-term investigation of the financial performance of companies with a net zero target is of interest. In the light of impending governmental regulations and possible cost savings through more efficient processes, a long-term competitive advantage is conceivable. Thus, investors' assessments might change over time.

The remainder is structured as follows. First, chapter 2 provides relevant definitions regarding net zero targets. Then, chapter 3 provides an overview of related theoretical frameworks and literature combined with the development of hypotheses. Thereafter, chapter 4 outlines the data collection and sample selection process. The ESG score development, as a basis for the empirical analysis, I reveal within chapter 5. Consequently, chapters 6 and 7 elaborate on the analyses performed. Finally, I discuss and conclude the findings in chapters 8 and 9.

## 2. Classification and definition of net zero targets

The European Commission defines CSR as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Comission, 2001, 8). Thus, with the environmental pillar being a subset of CSR, net zero targets can be considered as a specific CSR activity.

However, as the overarching goal of this study is to identify determinants and consequences of net zero and carbon neutral targets, the meaning of a carbon neutral or a net zero target needs to be defined in more detail. Here, two definitions by the IPCC are relevant.

a. Net zero $CO_2$ emissions: "Net zero carbon dioxide ($CO_2$) emissions are achieved when anthropogenic $CO_2$ emissions are balanced globally by anthropogenic $CO_2$ removals over a specified period. Net zero $CO_2$ emissions are also referred to as carbon neutrality" (IPCC, 2018a).

b. Net zero emissions: "Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period" (IPCC, 2018a).

From these definitions of the IPCC, I conclude that a "net zero" and "neutral" emission status may be regarded as synonymous, but the types and amounts of emissions covered by the targets can vary. However, I comment on this distinction at a later stage. Within this study, I use the term "net zero" as a proxy for both net zero and neutrality targets.

## 3. Literature review and hypothesis development

As indicated, this study can be considered as two-folded in its content and structure. Considering this and regarding net zero announcements as CSR activity in general, it contributes to two distinct strands of literature. First, to the literature on identifying determinants of voluntary disclosure and initiative adoption related to CSR, and second, to the literature on assessing the impact of CSR disclosure on economic performance and thus the awareness of investors on these. This chapter is structured accordingly. It presents for each part related literature and hypotheses.

### 3.1. Determinants of net zero target announcements – Theoretical frameworks

Several theoretical frameworks are used in prior research to explain the determinants of voluntary reporting of CSR-related issues by companies (Tagesson, Blank, Broberg, & Collin, 2009, 353). Among others, the agency theory, the legitimacy theory, and the stakeholder are applied.

First, the economic agency theory or positive accounting theory is used (e.g., Belkaoui & Karpik, 1989). It views the firm as a nexus of contracts between parties acting opportunistically in efficient markets. Thereby, CSR disclosure may be useful to identify implicit political costs, debt contractual relationships, or compensation contracts of managers (Cormier et al., 2005, 7). The system-oriented, social-political legitimacy and stakeholder theories, however, are considered more suitable for explaining the motives of voluntary CSR disclosure (e.g., Gray, Kouhy, & Lavers, 1995; Milne, 2002; O'Dwyer, 2003). While Gray et al. (1995, 52) view them as the ones that might allow for the most insights into CSR behavior, they posit that CSR disclosure is a means for companies to legitimize their continued existence or operations to society (Cormier et al., 2005, 7). Consequently, corporate CSR disclosure can be regarded as a way to manage public impressions and to control for political and economic influences by constructing an image or symbolic impression of itself (Neu, Warsame, & Pedwell, 1998, 267).

In fact, however, theories are often used complementary instead of contradictory to explain a company's motivations for voluntary CSR disclosure (e.g., Cormier et al., 2005; Reverte, 2009). Thereby, they follow Gray et al. (1995, 67) who state that CSR practice cannot fully be captured by only one theoretical lens. In my study, I analyze a wide range of

determinants that might explain the voluntary disclosure of net zero targets. Their potential influence, thereby, can be justified by several theories. Thus, similar to Tagesson et al. (2009) I do not rely on one specific theory, rather I use an eclectic approach to explain their content.

## 3.2. Determinants of net zero target announcements – Hypothesis development

In the following, I describe all the determinants I analyze. These were mostly found in prior literature to correlate significantly with the extent of CSR activism. I provide potential explanations for their associations and, thereby, refer to relevant literature. Since the pursuit of net-zero targets is a specific CSR-related area of activity, I infer hypotheses for the relationship between these determinants and the announcement of net-zero targets based on these explanations.

### 3.2.1. Country profile

While literature with a focus on companies located in developing countries is mainly characterized by single-country case studies (Ali, Frynas, & Mahmood, 2017, 290), related literature with a focus on developed countries considers cross-border differences and identifies significant variations in disclosure behavior (e.g., Adams, Hill, & Roberts, 1998; Maignan & Ralston, 2002; van der Laan Smith, Adhikari, & Tondkar, 2005). For instance, van der Laan Smith et al. (2005, 147) explain this effect by assuming different levels of stakeholder orientation. Thus, I hypothesize:

> **H1a:** *There is a significant relationship between country profile and net zero pledges.*

### 3.2.2. Industry profile

In prior research, the association between the industry sector affiliation and voluntary CSR disclosure is analyzed. Thereby, it is often shown that companies operating within industry sectors with a greater negative environmental impact disclose and report more on CSR topics. (e.g., Cowen, Ferreri, & Parker, 1987; Adams et al., 1998; Reverte, 2009). Hence, legitimacy theory might be seen as a relevant theory for reasoning. Following the findings of prior literature, I hypothesize:

> **H1b:** *There is a positive significant relationship between an industry's environmental impact and net zero pledges.*

### 3.2.3. Firm size

Legitimacy theory describes a public pressure perspective, which discusses the intervention of public and state institutions in organizations that are assumed to violate the social contract (Reverte, 2009, 354). This view is in line with the political cost hypothesis of Watts and Zimmerman (1990, 139) that considers size as a proxy for political attention. Consequently, large companies, in particular, tend to disclose more in order to point out that activities are legitimate and compatible with good corporate citizenship (Brammer &

Pavelin, 2006, 1173). In line with this conclusion, Dowling and Pfeffer (1975, 133) argue that due to their higher political visibility larger companies are assumed to legitimize themselves more. The firm size is one of the most frequently examined determinant in literature (Ali et al., 2017, 275). In general, in line with theory a significant positive relationship is found (e.g., Brammer & Pavelin, 2008; Reverte, 2009; Gamerschlag et al., 2011). Thus, I hypothesize:

> **H1c:** *There is a positive significant relationship between firm size and net zero pledges.*

### 3.2.4. Leverage

In light of agency theory, Jensen and Meckling (1976, 337–39) claim that firms with higher debt levels are likely to report voluntary information in an effort to mitigate agency costs and the cost of capital, respectively. In contrast, Brammer and Pavelin (2008, 125) argue that managers are less constrained by creditors with regard to CSR activities if the company has low leverage ratios. Belkaoui and Karpik (1989, 48) support the direction in relationship of the latter with their findings. Due to the two-fold argumentation, I do not hypothesize a directed relation:

> **H1d:** *There is a significant relationship between leverage and net zero pledges.*

### 3.2.5. Profitability

When looking at profitability as a potential determinant for voluntary CSR disclosure, several theories were used in prior literature for explanations. Belkaoui and Karpik (1989, 40) argue that a positive association between profitability and disclosure activism is caused by management skills. Skilled managers who achieve high profitability of their company would also have an understanding of social responsibility and thus engage more actively in related behavior. Next, based on agency theory and political cost theories, Inchausti (1997, 54) argues that managers in more profitable companies are eager to support their position and compensation through more detailed reporting. According to Ng and Koh (1994, 33), more profitable companies are subject to higher public and political pressure, wherefore voluntary reporting can be understood as a self-regulating mechanism to avoid regulatory action. Pirsch, Gupta, and Grau (2007, 127–28) link the stakeholder theory with CSR disclosure and argue that the reason for the positive correlation could also be that more profitable companies just have the economic means to consider social responsibilities in addition to their core businesses. Considering the legitimacy theory, however, Neu et al. (1998, 270) argue in two directions. First, a company with high profitability might want to show that this was not achieved at the expense of the environment. Second, companies with lower profitability might want to distract from the same or point to long-term competitive advantages. Considering again the two-folded argumentation possibility, I hypothesize:

> **H1e:** *There is a significant relationship between profitability and net zero pledges.*

### 3.2.6. Innovation

The determinant innovation was not selected based on findings from previous literature but on my own reasoning. The basic idea is that a company with large investments in research and development (R&D) activities concerns long-term competitiveness and is willing to allocate resources to this end. The realization of a corporate net zero status could provide a competitive advantage in the future, in particular, in light of potential improvements of processes, technological assets and competencies (Kolk & Pinkse, 2005, 9). Hence, I hypothesize:

> **H1f:** *There is a positive significant relationship between innovation and net zero pledges.*

### 3.2.7. Financial constraints

Reasons for the influence of the determinant "financial constraints" on CSR disclosure are probably to be seen similar to those for profitability. In particular, the argument that companies that are profitable can invest money in non-core activities seems applicable (Pirsch et al., 2007, 128). However, if one considers a company to be financially constrained if no dividends are paid, as I do within this study, a further explanation is also imaginable. For instance, a company could suspend voluntary payments in order to build up financial reserves for the costs associated with planned CSR activities. Because of the contrasting approaches, I hypothesize in a non-directed way that:

> **H1g:** *There is a significant relationship between financial constraints and net zero pledges.*

### 3.2.8. Board size

While a company's board size can serve as a proxy for board governance (Zainon, Atan, Ahmad, & Adzrin, 2012, 484), considering it as a predictor for voluntary CSR disclosure one can argue in two directions. On the one hand, Jensen (1993, 865) argues that a larger board size leads to lower coordination, communication, and decision-making effectiveness as well as to a more difficult monitoring process by the chief executive officer (CEO). On the other hand, as cited by Abeysekera (2010, 507), a larger board size might imply more diverse and innovative knowledge to meet global challenges more efficiently. Also, Giannarakis (2014, 410) who finds a positive correlation supports this assumption. Based on the latter, I hypothesize:

> **H1h:** *There is a positive significant relationship between board size and net zero pledges.*

### 3.2.9. (Independent) Non-executive board members

Empirical governance literature supports the view that the board's extent of independence is linked to its composition, and that independence promotes board effectiveness (Said, Zainuddin, & Haron, 2009, 215). Based on the results of Webb (2004, 275), who finds that socially responsible firms generally do have more independent directors,

Said et al. (2009, 215) conclude that independent directors are essential for monitoring proper company management. Further, Haniffa and Cooke (2005, 400) interpret CSR disclosures as a strategy initiated by non-executive directors to close perceived legitimacy gaps among shareholders and the management. Accordingly, I hypothesize:

> **H1i:** *There is a positive significant relationship between the proportion of non-executive board members and net zero pledges.*

### 3.2.10. Ownership concentration

Evidence suggests that principal agency conflicts in form of opportunistic management behavior or conflicts of interests are more likely to occur for companies with a more dispersed ownership structure (Reverte, 2009, 356). As small shareholders must rely on corporate disclosures to gather information about a company's environmental impacts, information asymmetries are likely to occur in case of their absence (Brammer & Pavelin, 2008, 124). Therefore, companies with a more dispersed ownership are expected to disclose more to reduce information asymmetries (Prencipe, 2004, 326–27). Concluding, I hypothesize:

> **H1j:** *There is a negative significant relationship between ownership concentration and net zero pledges.*

### 3.2.11. Government ownership

I examine the factor "government ownership" in the form of increased stockholdings by the government or by governmental institutions since the resulting increased proximity to the government could lead to increased regulatory pressure (Zeng, Xu, Yin, & Tam, 2012, 311–12). Consequently, as Patten and Trompeter (2003, 93) show, environmental disclosure could help reduce potential regulatory costs. Said et al. (2009, 223) also find a positive correlation between government shareholding and CSR disclosure. They justify this by stating that the state is an authority trusted by the public. Hence, I hypothesize:

> **H1k:** *There is a positive significant relationship between governmental stockholdings and net zero pledges.*

### 3.2.12. Environmental score

The idea of analyzing past environmental performance as a predictor for voluntary disclosure of net zero targets emerged from the identified positive relation between social performance and the decision to disclose social information by Belkaoui and Karpik (1989, 48). This finding supports the assumption that the aim of an in social activities engaging company is to create an impression of sensitivity to topics that might not be profitable in the short run but be of long-term shareholders' interest (Abbott & Monsen, 1979, 511–12). Additionally, one might assume that entering a net zero

target pursuit is more feasible when previous environmental performance is already high thus the gap to achieving the target is smaller. Concluding, I hypothesize:

> **H1l:** *There is a positive significant relationship between the environmental score and net zero pledges.*

### 3.3. Investors' awareness on net zero target announcements – Literature review

When trying to depict the association between CSR performance and economic performance literature provides different forms of theories. Representative for early literature, Friedman's (1970) Doctrine "The Social Responsibility of Business Is to Increase Its Profits" considers social investments as additional costs that contradict profit maximization and represent a violation of the contractual principal-agency relationship between shareholders and managers. This view is challenged by the following literature. Porter (1991) as well as Porter and van der Linde (1995), for example, describe a "win-win" situation between social investments and economic benefits. Often referred to as the "Porter hypothesis" (Flammer, 2013, 760), Porter and van der Linde (1995, 105–10) argue that pollution is a manifestation of economic waste due to inefficient processes in handling resources bearing hidden costs. Thus, diminishing pollution enables cost reduction or profit maximization, respectively. Further, strict environmental standards would spur innovation and might thus promote competitiveness (Porter, 1991, 168).

By combining the two theories described above to some extent, there is a third approach to describing the relation between CSR performance and economic performance. That is, a non-linear inverted u-shaped or u-shaped correlation arguing that depending on the level of environmental performance the sign of association can turn from positive to negative or vice versa (e.g., Fujii, Iwata, Kaneko, & Managi, 2013; Lankoski, 2008).

In the spirit of the described academic work, a broad range of empirical studies analyzes the relation between CSR activities and financial performance. More specifically, the CSR awareness of equity investors by studying the impact of CSR news on firm value or stock returns, respectively. This is the research field this work may be assigned to.

Prior research finds mixed results. On the one hand, evidence is provided that positive and negative CSR events lead to market responses in the same direction (e.g., Hamilton, 1995; Klassen & McLaughlin, 1996; Capelle-Blancard & Laguna, 2010; Flammer, 2013; Crifo, Forget, & Teyssier, 2015). On the other hand, it is also shown that the news content and market responses might go in different directions (e.g., Lyon, Lu, Shi, & Yin, 2013; Oberndorfer, Schmidt, Wagner, & Ziegler, 2013; Krueger, 2014, Groening & Kanuri, 2018). For instance, using an event study methodology Krueger (2014, 40–41) finds that shareholders react strongly negatively upon negative CSR news and slightly negatively upon positive CSR news, showing the latter to be subject to the presence of agency problems and prior social responsibility.

However, some studies further indicate an asymmetric reaction on CSR news by the market (e.g., Flammer, 2013; Crifo et al., 2015; Capelle-Blancard & Petit, 2019). While negative news seems to trigger quite strong negative market reactions, positive CSR policies are not or only slightly rewarded. Capelle-Blancard and Petit (2019, 557–58), for example, find that there is a significant decrease in a firm's market value of around 0.1% on average following the publication of negative ESG news, but a barely significant effect following positive ESG news.

Another stream in the previous literature examines the effect of positive CSR activities or news as an "ex-ante insurance" effect to offset the impact of negative events (Christensen, Hail, & Leuz, 2021, 1199). Godfrey, Merrill, and Hansen (2009, 441–42), as an example, describe this insurance-like effect to appear for institutional CSR activities aiming at society at large but to disappear for technical CSRs aiming at trading partners. Also, Hoepner, Oikonomou, Sautner, Starks, and Zhou (2021, 25–26) show this effect while pointing out downside risk is lowered the most for environmental matters. Additionally, this effect, which appears to generate goodwill among shareholders, has been noted in various specific contexts including corporate scandal revelations (e.g., Janney & Gove, 2011), restatement announcements (e.g., Wans, 2020), negative events in form of negative press coverage (e.g., Shiu & Yang, 2017), the financial crisis (e.g., Lins, Servaes, & Tamayo, 2017), and the BP oil spill (e.g., Heflin & Wallace, 2017).

My study builds on the literature cited so far in that it analyzes a very recent environmental phenomenon, the target announcement of eliminating or neutralizing corporate emissions. While, in general, such an announcement by a company can certainly be interpreted as positive news related to the environment, the actual achievement of the goal is often still far away. Hence, this study analyzes not an environmental performance per se but the intention to perform well. Accordingly, the questions to be answered within this research paper are therefore on the one hand to which extent such an intention is classified as relevant from an investor's perspective and on the other hand whether differences between the announcements and the targets described therein influence investors' reactions. With respect to the latter, my work differs from previous literature. Through the results of the first part of my analysis, I can control for factors that have an impact on the CSR behavior of companies, and thus conduct a more focused content-specific investigation.

### 3.4. Investors' awareness on net zero target announcements – Hypothesis development

Building on previous literature that addresses the topic of emissions and investor valuation in more detail, I develop my hypotheses. Although preceding literature indeed addresses the negative pricing of emissions (e.g., Konar & Cohen, 2001; Chapple, Clarkson, & Gold, 2013; Matsumura, Prakash, & Vera-Muñoz, 2014; Clarkson, Li, Pinnuck, & Richardson, 2015; Griffin, Lont, & Sun, 2017) and the positive effect of voluntary disclosure of GHG emissions (e.g., Griffin & Sun,

2013), the question regarding the market reaction specifically to net zero targets as of the date of publication remains, to the best of my knowledge, unattended. However, based on these findings one might expect a positive stock market reaction upon net zero target announcements.

Contrary to this conclusion, Fisher-Vanden and Thorburn (2011, 444) find that companies that participate in voluntary climate initiatives suffer negative stock market reactions. Also, Dam and Petkova (2014, 600) find stock prices to drop when companies commit voluntarily to environmental supply chain sustainability programs. Since net zero targets represent the desired outcome of voluntary climate strategies while often involving the whole supply chain, I hypothesize the following:

> **H2a:** *Investors are aware of net zero targets and react negatively upon their announcement.*

Regarding the analysis of content-related drivers, I consider the finding of Johnson, Theis, Vitalis, and Young (2020, 659–60) as relevant. Their results suggest that investors value differing climate strategies unequally indicating that investors indeed consider not only the climate targets themselves but also how these are planned to be achieved. Therefore, I conclude the following hypothesis:

> **H2b:** *Announcement characteristics, especially content characteristics related to the net zero targets, affect investors' reactions significantly.*

## 4. Data

This chapter aims to describe the data basis for the performed analyses. To this end, it is shown what defines a relevant target, which sources are approached and how the final sample is selected. Thereafter, a summary of the final sample follows.

### 4.1. Data collection and selection

Following the definitions provided in chapter 2, for the purpose of data collection, I regard all climate targets with the following key terms as equally relevant: "carbon neutrality", "net zero carbon (emissions)", "net zero $CO_2$ emissions", "net zero $CO_2$ equivalents ($CO_2e$)", "net zero emissions", "net zero GHG emissions", "zero carbon", "zero emission", "carbon-free", "carbon negative", "climate neutral", "climate positive", "resource positive", "climate negative". In this context, it must be mentioned that "climate neutrality" according to the IPCC (2018a) glossary must be considered as a somewhat more ambitious goal, since, in addition to the net zero goal, it means that regional or local bio-geophysical effects are accounted for. Within this study, however, I do not differentiate here.

In case a company has not announced a target including the above-mentioned key terms, I regard a further type of announcement as net zero goal, namely corporate climate targets approved by the SBTi in line with a 1.5°C trajectory.

More specifically, the cross-industrial organization founded to combat climate change in line with the 2015 Paris Agreement recently founded the "Business Ambition for 1.5°C", a campaign which is intended to provide a guideline for science-based net zero targets. To become an official member of the campaign, companies must set climate targets with sufficient ambition. Simplified, a company that commits to climate targets across all scopes of emission in line with the 1.5°C future will be approved as a signatory (SBTi, 2021b, 2–3)[1,2]. Accordingly, corporate announcements stating SBTi approved climate targets across scopes in line with the 1.5°C trajectory or, more specifically, with the Business Ambition's requirements are counted as equivalent to net zero target announcements.

For my research, I focus on the US capital market because with the US rejoining the Paris Climate Agreement under President Biden in January 2021, the issue of climate change may become more prevalent again (U.S. Department of State, 2021). I treat the companies included in the Russell 1000 index as the underlying population. According to FTSE Russell (2022, 1), this index comprises about 1000 of the largest securities measured by market capitalization. Thereby, it covers about 93% of the entire US market, which is why I consider it representative. For an overview of index constituents, I start with an excel excerpt from the Stock Market MBA (2021) website. This contains a total of 1022 shares from 1014 different companies. Further, the list presents for each company the respective ticker symbols, Global Industry Classification Standard (GICS) sector specifications, insights on market capitalization as well as other information that is, however, less relevant for this work. In preparation for the empirical analyses, I supplement the list with columns for the International Securities Identification Number (ISIN) and the announcement date. Based on the list, I examine the websites, or more precisely the newsrooms, of the individual companies for announcements concerning the climate targets described above. The term "announcement" therefore means short disclosures published by a company, mainly in form of press releases, news releases, or blog posts. In a two-month data collection phase, from mid-August 2021 to mid-October 2021, I have surveyed the newsrooms for relevant announcements from the beginning of 2019 until the respective accessing date. In order to be able to draw an up-to-date conclusion about the capital market consequences of the de-

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[1]The requirement for inclusion in the Business Ambition for 1.5° C has changed to some extent from 29 October 2021 with the introduction of the "Net-zero Standard". From now on, each applicant must commit to this new standard. However, as the data collection phase has already been completed at that time, this standard is not taken into account (SBTi, 2021b, 2).

[2]Within GHG Protocol Corporate Accounting and Reporting Standard of the World Resources Institute and World Business Council for Sustainable Development (2004, 27) scope 1 emissions are defined as "direct GHG emissions [that] occur from sources that are owned or controlled by the company [...]", "scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company", and "scope 3 emissions are [all other indirect emissions and, author's note] a consequence of the activities of the company, but occur from sources not owned or controlled by the company."
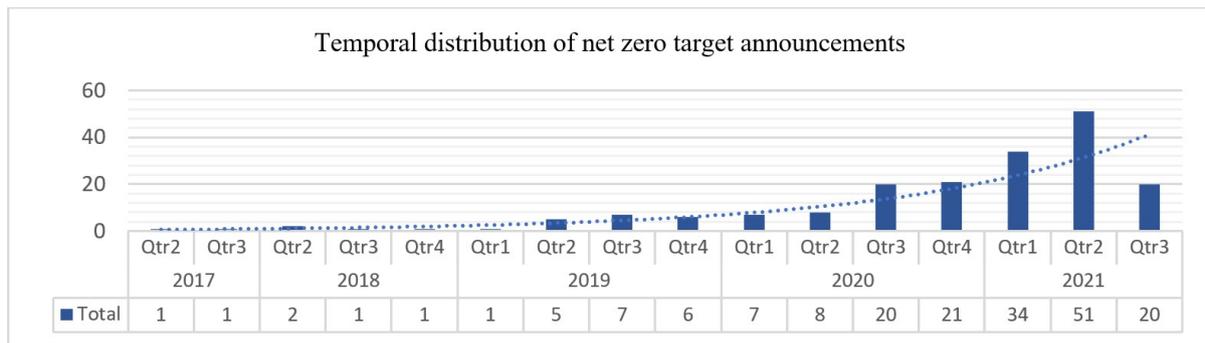
**Figure 1:** Temporal distribution of net zero target announcements

fined climate targets, those with a temporal scope beyond the year 2020 are under focus. For this reason and given the impending start of a new decade that could spur increased new environmental initiatives by companies, I choose 2019 as a starting point for observation. Overall, this process resulted in a total number of 186 announcements of climate targets that I classify as net zero targets. The first part of the analysis, the estimation model for firm-specific determinants, in total deals with 169 of these as I drop 17 due to lack of available financial information for certain variables.

The event study in the second part of the analysis, concerning the investors' awareness measurement, merely deals with 122 targets since several assumptions of the related research design have to be met here. First, announcements that only contain information related to the climate targets (isolated announcements) shall be considered in order to increase the probability that market effects are solely caused by these targets. Announcements that also comprise other sustainability-related, or financial information (non-isolated announcements) cannot be regarded (Gerpott, 2009, 213–14). As a consequence, starting again from the 186 identified announcements I drop 63. I classify 123 announcements as isolated. Second, the related research design requires a sufficient stock price history for each of the companies. Here, I have to drop one further announcement so that in total, as mentioned, 122 announcements build the final sample of the event study. Finally, in the second part of the analysis, I run a regression that examines investors' awareness on certain content-related factors. For this purpose, in addition to the 64 announcements already excluded, three further have to be ruled out. Two because of missing information for certain variables and one because of a parallel target announcement of two subsidiaries with somewhat distinct content at announcement date. This makes it impossible to attribute the stock price change of the group to the content published. In total, the regression specification deals with 119 announcements. Appendix 1 summarizes the sample selection process in tabular form. In the next subchapter, I describe the derived final samples in more detail.

### 4.2. Sample description

Without considering sample subtractions, the temporal distribution of the release dates from the initially collected 186 net zero announcements is as shown in Figure 1. In a few cases, companies referenced to net zero targets with release dates prior to 2019, but since these are still focused on a period beyond 2020, they are part of the study. Nevertheless, it should be noted that I have not actively studied the period before 2019. Thus, the number of announcements is not representative. However, even the period from 2019 onwards outlines a rising trend in the number of announcements. The increasing importance of environmental aspects within the corporate sector is reflected.

For carrying out the analysis concerning the identification of CSR determinants I use 169 of the 186 presented. Due to the consideration of prerequisites of the second part's research design, however, I discard 64 (67) announcements. Thus, the measurement of the investors' awareness is based on 122 (119) announcements. The following Table 1 presents a detailed overview of the number of collected announcements structured by GICS sector affiliation of the respective companies. In addition to the absolute numbers, the percentages of identified companies with such announcements relative to the total number of companies per GICS sector are listed.

### 5. ESG score for content analysis

Upon the sample definition, I perform a content analysis of the announcements. Thereby, I develop an ESG score which should enable the comparability of the announcements among the companies. The targets, so far treated as equivalent, are now examined in more detail. For the first time, this differentiated view is applied in chapter 7.3, when I measure the influence of content-related factors on capital market reactions. In the preceding analyses, I do not distinguish between the identified targets. However, in order to create an awareness that net zero targets can differ in essential characteristics, I present this chapter in advance.

In order to come up with a set of potential characteristics, applicable for the evaluation of net zero targets published within corporate announcements, I combine elements of four

**Table 1:** Overview of final samples

| GICS sector | Russell 1000 constituents | Part 1 Non-isolated targets | | Part 2.1 Isolated targets | | Part 2.2 | |
|---|---|---|---|---|---|---|---|
| | | absolute | relative | absolute | relative | absolute | relative |
| Communication Services | 47 | 9 | 19.15% | 6 | 12.77% | 6 | 12.77% |
| Consumer Discretionary | 125 | 26 | 20.80% | 19 | 15.20% | 19 | 15.20% |
| Consumer Staples | 52 | 10 | 19.23% | 6 | 11.54% | 6 | 11.54% |
| Energy | 31 | 6 | 19.35% | 4 | 12.90% | 4 | 12.90% |
| Financials | 144 | 15 | 10.42% | 15 | 10.42% | 14 | 9.72% |
| Health Care | 122 | 10 | 8.20% | 4 | 3.28% | 4 | 3.28% |
| Industrials | 153 | 22 | 14.38% | 13 | 8.50% | 13 | 8.50% |
| Information technology | 177 | 27 | 15.25% | 21 | 11.86% | 21 | 11.86% |
| Materials | 56 | 14 | 25.00% | 11 | 19.64% | 10 | 17.86% |
| Real Estate | 68 | 11 | 16.18% | 6 | 8.82% | 6 | 8.82% |
| Utilities | 39 | 19 | 48.72% | 17 | 43.59% | 16 | 41.03% |
| total | 1014 | 169 | 16.67% | 122 | 12.03% | 119 | 11.74% |
| | | Determinants model | | Event study | | Regression | |

Table notes: This table presents the number of net zero target announcements of the final samples for each of the analyses performed.

**Table 2:** Announcement indicators

| Dimension | Indicator | Reference concept | | | |
|---|---|---|---|---|---|
| | | CA 100+ | MSCI | SBTi | CAT |
| Content dimension | Timeframe | Yes | Yes | Yes | Yes |
| | Scope coverage | Partial | Yes | Yes | Partial |
| | Interim targets | No | No | No | Yes |
| | Reporting process | Yes | No | No | Yes |
| | Third party involvement | Partial | Yes | No | No |
| | Capital allocation | Yes | No | No | No |
| | Climate government | Yes | No | No | No |
| | Past activities reference | No | Yes | No | No |
| Formal dimension | Length | - | - | - | - |
| | Headline conciseness | - | - | - | - |

Table notes: This table presents the indicators along which I examine the identified announcements. Additionally, it references the single indicators to the underlying theoretical concepts. "Yes", "No", and "Partial" indicate whether a reference concept uses, does not use, or uses a similar indicator, respectively.

net zero target classification concepts. First, "The Climate Action 100+ Net-Zero Company Benchmark" established by the investor-led Climate Action 100+. (2021) initiative, second, the guide of "Breaking Down Corporate Net-Zero Climate Targets" published by financial services provider MSCI (Watanabe & Panagiotopoulos, 2021), third, SBTi's concept of key dimensions of corporate net zero targets (SBTi, 2020, 14–17), and fourth, the evaluation methodology designed by

the Climate Action Tracker (2021) initiative focused on national net zero targets. Table 2 presents an overview of the derived indicators and their connection with the four underlying concepts. In addition to the indicators related to the comparability of the climate targets, I consider two further indicators which categorize an announcement's length and headline conciseness.

Continuing from here, in order to enable actual compara-

**Table 3:** ESG score for content analysis

| Dimension | Score variable | Indicator | Categorization | |
|---|---|---|---|---|
| Content dimension | Target level of ambition (Var.: target_amb) | Timeframe | Long-term (2036 to 2050) | 1 |
| | | | Medium-term (2026 to 2035) | 2 |
| | | | Short-term (up to 2025) | 3 |
| | | Scope coverage | Not applicable | 1 |
| | | | Part of scopes | 1 |
| | | | All scopes (1,2,3) | 4 |
| | | | | **7** |
| | Target supporting characteristics (Var.: target_su) | Interim targets | No | 0 |
| | | | Yes | 1 |
| | | Reporting process | No | 0 |
| | | | Yes | 1 |
| | | Third party involvement | No | 0 |
| | | | Yes | 1 |
| | | Capital allocation | No | 0 |
| | | | Yes | 1 |
| | | Climate government | No | 0 |
| | | | C-suite executive | 0,33 |
| | | | Sustainability related person | 0,66 |
| | | | CEO + Sustainability related person | 1 |
| | | Past activities reference | No | 0 |
| | | | Yes | 1 |
| | | | | **6** |
| Formal dimension | Announcement length (Var.: ann_l) | Length* | Word count < 300 (short) | - |
| | | | 300 < Word count < 400 (medium) | - |
| | | | Word count > 400 (long) | - |
| | | | | |
| | Announcement headline (Var.: ann_h) | Headline conciseness | No | - |
| | | | Yes | - |

Table notes: This table presents the ESG score that should create comparability of net zero target announcements. ESG score variables, the included indicators and their potential values are defined.
*The classification within the indicator "length" is oriented on Murray (2014) who defines a press release with 300 to 400 words as optimal in its length.

bility between the announcements, I form the ESG score. In this score, I categorize and assign potential values to the respective indicators and aggregate them into variables, whose correlation with the investors' awareness I finally examine statistically. Before I go into more detail, Table 3 presents the ESG score developed. It contains the identified indicators, their potential values in qualitative and quantitative form as well as the final score variables to be tested.

Sorted by the ESG score variables, I discuss the associated indicators and their categories in the following. However, detailed keywords and identifiers within an announcement's text enabling the classification into indicator categories are presented in Appendix 2.

5.1. Target level of ambition

The variable "target level of ambition" (*target_amb*) is composed of the two indicators "timeframe" and "scope coverage". Both indicators describe how ambitious a climate

target is. The "timeframe" indicator refers to the year in which the final climate target is to be achieved. Analogous to (Climate Action 100+., 2021, 1–2), I distinguish between long-term targets (target achievement in the period 2036 to 2050), medium-term targets (target achievement in the period 2026 to 2035), and short-term targets (target achievement by 2025). In general, a shorter timeframe might be considered more ambitious for a given emission reduction target (Watanabe & Panagiotopoulos, 2021, 12). The "scope coverage" indicator on the other hand distinguishes between partial consideration of the scopes of emission or consideration of all scopes of emission. The third possibility is that the company does not make any statements in this regard which is assumed to be equivalent to a partial coverage, at least when assigning quantitative values. In principle, the more scopes of emission are taken into account, the more ambitious the target (Watanabe & Panagiotopoulos, 2021, 7–10). The quantification of the categories aims at an ascend-

ing order of ambition when combining the two indicators: long-term & part of scopes (not applicable), medium-term & part of scopes (not applicable), short-term & part of scopes (not applicable), long-term & all scopes, medium-term & all scopes, short-term & all scopes. This order is based on my assumption that a change within the scope coverage categories implies a larger difference in ambition than a change of the timeframe. This is due to the fact that a consideration of all scopes of emissions implies the inclusion of emissions along the entire supply chain, thus, contrary to temporal aspects, large parts of the effort are not under the direct control of the company.

## 5.2. Target supporting characteristics

The variable "target supporting characteristics" (*target_su*) is designed to describe the degree of credibility of the target. It contains several indicators that would, if met, support a climate strategy, and thus increase the seriousness of the target pursuit. Therefore, the higher the quantitative value of the variable, the more credible the goal can be interpreted. Most of the included indicators, except "climate government", are dichotomous and only differ in whether they are specified in the announcement or not. More specifically, the indicator "interim targets" equals the value 1, if in addition to the final target also intermediate emission reduction targets with shorter timeframes are mentioned. Interim targets could make goals, in particular long-term ones, more transparent and accountable (SBTi, 2020, 10). The indicator "reporting process" has a value of 1 if the company states its intention to report regularly on progress. By this, the transparency on progress could be seen improved (Climate Action 100+., 2021, 11). Next, the indicator "third party involvement" is equal to 1 if the announcement mentions the cooperation with an external party to support the climate strategy. The feasibility of goal achievement could increase (Watanabe & Panagiotopoulos, 2021, 15). If the company states a fixed budget to support the realization of the target, the indicator "capital allocation" is equal to 1. The allocation of capital might enhance measurability of the goal trough quantification (Climate Action 100+., 2021, 3). It could also be a sign of the sincerity of the endeavor. Moreover, the indicator "past activities reference" is equal to 1 if the net zero target builds on previous activities to combat climate change. Preceding activities could indicate existing experience and knowledge as well as established processes to reduce emissions. The gap towards net zero status may be smaller and the probability of reaching the target higher (Watanabe & Panagiotopoulos, 2021, 13–14). Contrary to the dichotomous indicators presented, the "climate government" indicator finally is divided into several categories and describes potential responsibility allocation scenarios. These are to be considered in ascending order according to their potential of supporting the achievement of the target. In case no specific person is made responsible for achieving the target or no one is named, this is the solution assumed to be the least favorable. For the implementation of the goal, a superior solution is to assign the responsibility to a C-suite

executive (e.g., chief financial officer (CFO), chief innovation officer (CIO)). Through his/her decision-making power, an efficient realization process might be feasible. An even better solution may be to put someone who is specialized in sustainability in charge as expertise could imply higher quality decisions. I consider the best solution to be to divide the responsibility between a company's CEO and a person specialized in sustainability. Thus, the highest decision-making power of a company is backed by specialized knowledge. Efficient and high-quality decisions could be assumed from an investor's perspective. Overall, all indicators within the variable are weighted as equal in relevance. Each indicator can be assigned a maximum value of 1.

## 5.3. Announcement length

The variable "announcement length" (*ann_l*) does not imply an internal order, unlike the two described above. It should just be examined whether the length of the announcement has an influence on the reaction of the investors. In general, longer announcements might have the potential to provide more information to describe the climate goal and strategy in more detail. However, longer texts could also lose investors' attention.

## 5.4. Announcement headline

The last variable "announcement headline" (*ann_h*) is again a dummy variable. It denotes whether the final target already becomes apparent from the headline and thus the criterion "headline conciseness" is met. Including the keywords in the headline could increase the attention of investors to the announcement.

## 5.5. Excluded indicators

The two indicators "mitigation strategy" and "scope coverage", not listed in Table 2, were excluded from the final list in the course of the content analysis of the announcements. However, since these might be key characteristics of a climate strategy, I briefly explain the reasons here. First, the indicator "mitigation strategy" was excluded. It was designed to distinguish between climate strategies aiming at a net zero state predominantly through an actual abatement of emissions, such as through an increase in the efficiency of operations, or through offsets[3]. Previous literature finds investors to judge companies to be less valuable when emission reduction strategies rely on offsets (Johnson et al., 2020, 659). Thereby, the critics that offsets let firms appear to be environmentally responsible without changing their actual environmental impact are supported (Dhanda & Hartman, 2011, 126). However, the mitigation strategy is not considered as the analysis of the announcements has shown

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[3]According to the World Resources Institute (2010, 1) "a greenhouse gas (GHG) or "carbon" offset is a unit of carbon dioxide-equivalent (CO2e) that is reduced, avoided, or sequestered to compensate for emissions occurring elsewhere. These offset credits, measured in tons, are an alternative to direct reductions for meeting GHG targets in a cap-and-trade system."

that information on this topic is, due to the limited length of the releases, often described only insufficiently. The second excluded indicator, "emission coverage", seeks to determine whether a company aims to reduce all forms of GHG emissions or merely $CO_2$ emissions. This difference in potential forms of emission coverage is indicated by the definitions of net zero $CO_2$ emissions and net zero emissions of the IPCC (2018a) presented in chapter 2. Emission coverage is not considered as the content analysis has revealed that keywords such as "carbon neutral", which would indicate a $CO_2$ emission neutralization, and "net zero emission", which would indicate the consideration of all GHGs, are often used synonymously. Capri Holdings, as an example, pledges according to the headline of its target announcement to reach net zero emissions by 2025. Later in the press release, however, the company describes the same goal as an effort to achieve a 100% carbon neutral state (Capri Holdings, 2020).

The following chapters now address the analyses based on the samples and ESG score described. First, I study corporate determinants that correlate with the publication of net zero announcements. Second, I examine the impact of these announcements on the capital market and thus the investors' awareness on these.

# 6. Determinants of net zero target announcements

This chapter outlines the analysis performed to identify determinants that are statistically significantly correlated with the announcement of net zero climate targets. The chapter begins with a description of the research design. Thereafter, I present the definitions of the variables under focus before I provide the descriptive and empirical results.

## 6.1. Research design

I use a binary logistic regression model with the fact of target announcement as dependent dummy variable. Contingent upon the firm-specific determinants as independent variables this model allows for a consistent estimation of the probability of a target to be announced (i.e., the value of the binary dependent variable to become 1). While the exact definitions of the independent variables can be found in the next subchapter, the structure of a logit regression model can be generalized via the use of a logit link function as follows (Heck, Thomas, & Tabata, 2012, 16–20):

$$logit\,(Y=1) = \ln\left(\frac{p\,(Y=1)}{1-p\,(Y=1)}\right)$$

$$= \ln(odds\,(Y=1)) \ = \ \alpha + \sum_{j=1}^{m}\beta_j x_j \qquad (1)$$

with $\alpha$ being the intercept and $\beta_j$ representing the unstandardized regression slopes for each of the predicting variables $x_j$. In order to minimize the influence of extreme values, I perform a 98% winsorization on independent variables (e.g., Krueger, 2014). Additionally, I use heteroscedasticity-robust standard errors (e.g., Flammer, 2013) and test for multicollinearity using variance inflation factors (VIF) (e.g., Reverte, 2009; Cormier et al., 2005).

## 6.2. Variable definition

In this subchapter, I briefly outline the technical definitions of the dependent and independent variables that were identified as relevant regarding voluntary CSR disclosure by prior literature as pointed out in section 3.2.

The dependent variable "target" (*target*) is a dummy variable that equals 1 if a net zero target has been announced by a company. Among the set of independent variables, the first is the "country profile" (*non_US*), a dummy variable that equals 1 if the first two letters of a security's ISIN is not "US". It is used as a proxy that the headquarter of the corresponding company is located outside the US. Second, I analyze the influence of the "industry profile" (*GICS_sensitive*), a dummy variable that equals 1 for more emission sensitive GICS sectors (Energy, Utilities, Materials) and zero for less emission sensitive GICS sectors (all others). This differentiation between industries by their degree of environmental impact is oriented on Reverte (2009, 358). However, I reclassify the industries he defines as "more (less) sensitive" into GICS sectors (MSCI, 2018, 1–2). Third, I analyze the "firm size" (*ln_total_assets*). Following prior literature, it is measured by a firm's total assets (e.g., Gamerschlag et al., 2011; Haniffa & Cooke, 2005). In order to avoid the variable being subject to Skewness and Kurtosis, I apply the natural logarithm (e.g., Gamerschlag et al., 2011). Fourth, I observe the variable "leverage" (*leverage_ratio*). It stands for a firm's total debt to total capital ratio in percent. Fifth, I assess the "profitability" (*ROE*) as a potential impact factor. It is measured by a firm's return on equity ratio in percent (e.g., Tagesson et al., 2009, Haniffa & Cooke, 2005). The sixth variable describes a company's degree of "innovation" (*innovation*). It equals the percentage of expenses generated by R&D activities on total assets. In case no information has been available about a company's R&D expenses I assume a value of zero, i.e., no R&D activities. Seventh, I include the variable "financial constraints" (*div_pay*), a dummy variable that equals 1 if the annual dividend per share is larger than zero indicating that a company is not subject to financial constraints. Again, if no information has been available, I assume a value of zero. The eighth variable is the "board size" (*board_size*). It equals a company's absolute number of board members at fiscal year-end (e.g., Giannarakis, 2014). The ninth predictor is the proportion of non-executive directors at a company's board (*board_NonEx*) in percent (e.g., Haniffa & Cooke, 2005), the tenth regards the "ownership concentration" (*free_float*). The latter relates to the percentage of shares available to ordinary investors less the strategic holdings (e.g., Gamerschlag et al., 2011). Following Datastream's definition of the variable, holdings of 5% or more are seen as strategic. Eleventh, I regard the fact of "government ownership" (*gov_own*), a dummy variable that equals 1 if the government or a governmental institution has strategic holdings of 5% or more of a company's shares according to Datastream. The twelfth variable I consider is a company's

"environmental score" (*enscore*). The so called "Environmental Pillar Score" calculated by Refinitiv is designed to compare the publicly-reported ESG performance, commitment, and effectiveness of companies based on the three sub-categories resource use, emissions, and innovation (Refinitiv, 2022). The ESG performance classification table provided by Refinitiv can be found in Appendix 3. Finally, I control for industry fixed effects (*gics_1,...,n*) by using a dummy variable for each GICS sector (e.g., Flammer, 2013). The central sources for all the variables and their definitions are Refinitiv's Datastream International (Datastream International, n.d.) on the one hand and the list of Stock Market MBA, 2021 that I used as a starting point for the data collection on the other hand. While I relate the values of the variables for companies with a net zero target to the fiscal year preceding the announcement date, I relate the values of the variables for the companies in the Russell 1000 Index without an announcement, the control group, to fiscal 2020, the central year of the observation period.

Following the variable clarification, the binary logistic regression model for a company $i$, with $\varepsilon_i$ representing the error term, is composed as follows:

$$
\begin{aligned}
target_i = \alpha &+ \beta_1 non\_US_i + \beta_2 GICS\_sensitive_i \\
&+ \beta_3 \ln\_total\_assets_i + \beta_4 leverage\_ratio_i + \beta_5 ROE_i \\
&+ \beta_6 innovation_i + \beta_7 div\_pay_i + \beta_8 board\_size_i \quad (2) \\
&+ \beta_9 board\_NonEx_i + \beta_{10} free\_float_i \\
&+ \beta_{11} gov\_own_i + \beta_{12} enscore_i + \varepsilon_i
\end{aligned}
$$

The following Table 4 presents for each variable the respective abbreviation, explanation, official definition within Refinitiv's Datastream, if applicable, as well as the respective source.

### 6.3. Results

First, I compare the characteristics of the companies with and without a net zero target announcement. Table 5 presents the results. The proportion of firms headquartered outside the US is greater in the "companies with target" group. The same conclusion can be drawn for companies operating in more emission-sensitive sectors and companies paying dividends. Furthermore, on average, firms with a net zero target have a higher amount of total assets, a higher leverage ratio, a larger board size, a higher proportion of non-executive directors on board, a less concentrated ownership structure, and higher environmental scores. All named differences are significant at a 5% level at least using a two-tailed t-test. The differences in means regarding the companies' return on equity, degree of innovation, and government ownership are not statistically significant.

Table 6 reports the correlations among all the variables in the logistic regression model. It can be seen that some correlations, for example, *ln_total_assets* to *GICS_sensitive* ($\rho = 0.12$) or *board_size* to *leverage_ratio* ($\rho = 0.13$), are statistically significant at a 10% level. However, all VIFs –

not reported – are less than 10. Therefore, multicollinearity is no problem in this study (Wooldridge, 2013, 98).

Table 7, finally, reports the empirical results of regressing the defined explanatory variables on the dichotomous dependent variable *target*. The table does not list the odds ratios associated with the variables, as these do not reveal any new conclusions compared to the coefficients presented. While model (1) includes all potential variables that have been considered so far, model (2) only includes the significantly correlating variables of model (1). Model (2) is the one that I use further in the next chapter, the measurement of investors' awareness on net zero announcements. From Table 7 it can be concluded that the likelihood of publishing a net zero target is statistically significantly positively associated with the location of the companies outside the US (*non_US*) and the operation in emission-sensitive industry sectors (*GICS_sensitive*). Furthermore, the company size (*ln_total_assets*), the degree of innovation (*innovation*), the board size (*board_size*), and the past environmental performance (*enscore*) correlate significantly positively with the probability of a net zero target pledge. However, the dummy variable *div_pay* that was intended to show the effects of financial constraints is negatively correlated. The variables intended to describe a company's leverage (*leverage_ratio*), profitability (*ROE*), number of non-executive board members (*board_NonEx*), and government ownership (*gov_own*) appear not to be significantly correlated at a 10% level. Overall, one can summarize that the hypotheses H1a, b, c, f, g, h, and l can be confirmed. Hypotheses H1d, e, i, j, and k are rejected. An overview of the hypotheses and their results is provided in Appendix 4.

Comparing the pseudo $R^2$ values of the two models, one can see that model (2) (0.198), reduced by the non-significant factors, has an only slightly lower pseudo $R^2$ as model (1) (0.200). The predictive power can therefore be considered comparable (University of California, Los Angeles (UCLA), 2021). This is the reason why only the reduced model is used in the second part of the analysis.

## 7. Investors' awareness on net zero target announcements

Following the identification of relevant determinants, the second part of the analysis, explained within this chapter, examines the impact of net zero target announcements on the capital market, i.e., the investors' awareness on these. First, I use an event study to examine the impact in general, before I subsequently analyze content-related drivers of the announcements based on the ESG score presented in chapter 5 by means of a regression specification. The regression specification also relies on the identified CSR determinants to serve as control variables.

### 7.1. Research design

In order to measure the impact of net zero target disclosures on the capital market I perform an event study methodology. In general, an event study examines the movement

**Table 4:** Definition of variables in logistic regression model

| Variable | Measure Abbreviation | Explanation (Definition by Datastream) | Source |
|---|---|---|---|
| Target (dependent) | target | Dummy variable: Equals 1 if a net zero target has been announced (incl. not-isolated targets). | Corporate websites |
| Country profile | non_US | Dummy variable: Equals 1 if the first two letters of a securities ISIN are not "US". | Datastream (ISIN) |
| Industry profile | GICS_sensitive | Dummy variable: Equals 1 for more emission sensitive GICS sectors (Energy, Utilities, Materials) and zero for less emission sensitive GICS sectors (all others). | Stock Market MBA (2021) |
| Firm size | ln_total_assets | Total assets (Datastream: "Total assets represent the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.") - The natural logarithm is applied to avoid Skewness and Kurtosis. | Datastream (WC02999) |
| Leverage | leverage_ratio | Debt on Capital in percent (Datastream: (Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / (Total Capital + Short Term Debt & Current Portion of Long Term Debt) * 100)) | Datastream (WC08221) |
| Profitability | ROE | Return on equity in percent (Datastream: (Net Income - Bottom Line-Preferred Dividend Requirement) / Average of Last Year's and Current Year's Common Equity * 100)) | Datastream (WC08301) |
| Innovation | innovation | R&D expense on total assets in percent (Datastream: "Research and development expense represents all direct and indirect costs related to the creation and development of new processes, techniques, applications, and products with commercial possibilities.") | Datastream (R&D: WC01201) |
| Financial constraints | div_pay | Dummy variable: Equals 1 if the dividend per share is larger than zero. (Datastream: "Dividend per share represents the total dividends per share declared during the calendar year for U.S. corporations and fiscal year for non-U.S. corporations. It includes extra dividends declared during the year.") | Datastream (WC05101) |
| Board size | board_size | Number of board members (Datastream: "The total number of board members at the end of the fiscal year.") | Datastream (CG-BSDP060) |
| Non-executive board members | board_NonEX | Datastream: "Percentage of non-executive board members." | Datastream (CG-BSOO6V) |
| Ownership concentration | free_float | Percentage of free float shares (Datastream: "The percentage of total shares in issue available to ordinary investors. That means total number of shares less the strategic holdings. In general, only holdings of 5% or more are counted as strategic.") | Datastream (NOSHFF) |
| Government ownership | gov_own | Dummy variable: Equals 1 if "[…] strategic holdings of 5% or more [are] held by a government or a government institution" (Datastream). | Datastream (NOSHGV) |
| Environmental score | enscore | Environmental score (Datastream: "Refinitiv's Environment Pillar Score is the weighted average relative rating of a company based on the reported environmental information and the resulting three environmental category scores.") | Datastream (EN-SCORE) |
| Industry fixed effects – control variable | gics_ | Dummy variable for each GICS sector. | Stock Market MBA (2021) |

Table notes: This table presents the definitions of all variables in the logistic regression model.

**Table 5:** Comparison of companies with and without net zero target announcement

| | Companies without target | | | | Companies with target | | | | Difference |
|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | p50 | $\sigma$ | N | Mean | p50 | $\sigma$ | p-value |
| non_US | 704 | 0.05 | 0 | 0.22 | 169 | 0.10 | 0 | 0.30 | 0.012** |
| GICS_sensitive | 704 | 0.10 | 0 | 0.30 | 169 | 0.23 | 0 | 0.42 | 0.000*** |
| ln_total_assets | 704 | 16.17 | 15.99 | 1.40 | 169 | 17.07 | 16.82 | 1.41 | 0.000*** |
| leverage_ratio | 704 | 40.29 | 40 | 24.74 | 169 | 48.16 | 49.53 | 20.45 | 0.000*** |
| ROE | 704 | 11.76 | 9.59 | 48.06 | 169 | 18.07 | 13.24 | 42.84 | 0.118 |
| innovation | 704 | 2.68 | 0 | 5.03 | 169 | 2.41 | 0 | 4.78 | 0.535 |
| div_pay | 704 | 0.65 | 1 | 0.48 | 169 | 0.76 | 1 | 0.43 | 0.0096*** |
| board_size | 704 | 10.16 | 10 | 2.10 | 169 | 11.22 | 11 | 2.10 | 0.000*** |
| board_NonEx | 704 | 84.29 | 86.67 | 7.57 | 169 | 86.20 | 88.89 | 7.07 | 0.003*** |
| free_float | 704 | 84.42 | 88 | 14.49 | 169 | 88.43 | 92 | 12.74 | 0.001*** |
| gov_own | 704 | 0.02 | 0 | 0.13 | 169 | 0.02 | 0 | 0.15 | 0.565 |
| enscore | 704 | 39.24 | 39.15 | 27.47 | 169 | 62.62 | 67.31 | 20.89 | 0.000*** |

Table notes: This table compares the characteristics of companies with and without a net zero target along with all independent variables in the logistic regression model. *, **, *** indicate statistical significance at the 10, 5, 1% level, respectively. Table 4 defines all variables. The continuous variables of the model are winsorized at the $1^{st}$ and $99^{th}$ percentiles.

**Table 6:** Correlations among variables in logistic regression model

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| target | 1 | - | | | | | | | | | | | |
| non_US | 2 | **0.08** | - | | | | | | | | | | |
| GICS_sensitive | 3 | **0.16** | -0.04 | - | | | | | | | | | |
| ln_total_assets | 4 | **0.25** | 0.01 | **0.12** | - | | | | | | | | |
| leverage_ratio | 5 | **0.13** | -0.04 | **0.13** | **0.25** | - | | | | | | | |
| ROE | 6 | 0.05 | **-0.07** | **-0.08** | 0.07 | **0.15** | - | | | | | | |
| innovation | 7 | -0.02 | 0.00 | **-0.17** | **-0.34** | **-0.23** | -0.03 | - | | | | | |
| div_pay | 8 | **0.09** | -0.00 | **0.22** | **0.40** | **0.20** | **0.11** | **-0.40** | - | | | | |
| board_size | 9 | **0.20** | -0.00 | **0.10** | **0.52** | **0.13** | 0.06 | **-0.20** | **0.29** | - | | | |
| board_NonEx | 10 | **0.10** | 0.03 | **0.14** | **0.24** | **0.13** | 0.07 | **-0.12** | **0.16** | **0.28** | - | | |
| free_float | 11 | **0.11** | 0.04 | **0.06** | **0.22** | 0.03 | **0.07** | -0.06 | **0.12** | **0.16** | **0.17** | - | |
| gov_own | 12 | 0.02 | 0.00 | -0.03 | 0.01 | 0.05 | 0.01 | **-0.06** | 0.00 | -0.00 | 0.01 | -0.05 | - |
| enscore | 13 | **0.33** | 0.01 | **0.19** | **0.42** | **0.26** | **0.19** | **-0.14** | **0.40** | **0.30** | **0.24** | **0.20** | 0.02 |

Table notes: This table shows the Pearson pairwise correlations for all variables in the logistic regression model. Bold numbers denote statistically significant correlations at the 10 percent level. Table 4 defines all variables. The continuous variables of the model are winsorized at the $1^{st}$ and $99^{th}$ percentiles.

of stock prices in response to corporate events. It is a common research methodology used to analyze the awareness of investors regarding various kinds of unexpected events (Kothari & Warner, 2007, 6–9). The theoretical premise of an event study is the efficient market hypothesis (Fama, Fisher, Jensen, & Roll, 1969, 20). That is, "a market in which prices always "fully reflect" available information is called efficient" (Fama, 1970, 383). This implies that shareholders always fully consider new information. Consequently, it should be possible to determine the effect of such information on the market in its size and direction by observing stock price de-

velopments.

MacKinlay (1997) describes the procedure of an event study. In the following, I start with a summary of the basic steps. Thereafter, each step is explained in more detail. The first step is to define the event of interest as well as the period around the event in which the stock price development should be considered, the so-called event window. In practice, the event window usually comprises several days before and after the event under consideration, but at least the day of the announcement and one day thereafter. In order to control for information leakage to the market, the pre-

**Table 7:** Regression coefficients in logistic regression model

| Dependent variable target | Model (1) Coef. / t-stat | Model (2) Coef. / t-stat |
|---|---|---|
| non_US | 1.123*** | 1.107*** |
|  | (2.93) | (2.90) |
| GICS_sensitive | 1.127** | 1.089** |
|  | (2.10) | (2.09) |
| ln_total_assets | 0.330*** | 0.352*** |
|  | (2.99) | (3.24) |
| leverage_ratio | 0.002 |  |
|  | (0.51) |  |
| ROE | 0.001 |  |
|  | (0.28) |  |
| innovation | 0.050* | 0.049* |
|  | (1.71) | (1.72) |
| div_pay | -0.563* | -0.537* |
|  | (-1.95) | (-1.88) |
| board_size | 0.126** | 0.127** |
|  | (2.22) | (2.24) |
| board_NonEx | -0.002 |  |
|  | (-0.11) |  |
| free_float | 0.008 |  |
|  | (0.82) |  |
| gov_own | 0.282 |  |
|  | (0.40) |  |
| enscore | 0.027*** | 0.028*** |
|  | (5.39) | (5.46) |
| Constant | -10.024*** | -9.702*** |
|  | (-5.04) | (-6.04) |
| Fixed effects | Industry | Industry |
| N | 873 | 873 |
| pseudo $R^2$ | 0.200 | 0.198 |

Table notes: This table shows the coefficients and t-statistics of all variables in the logistic regression model predicting the probability of a net zero target announcement. Model (2) only includes the significant variables of model (1). All models use robust standard errors and are controlled by industry-fixed effects. *, **, *** indicate statistical significance at the 10, 5, 1% level, respectively. Table 4 defines all variables.

event stock returns can also be of interest. To come up with the impact of the event abnormal returns need to be calculated within the event window. Abnormal returns are derived when subtracting the normal returns from the actual ex-post returns of a share on a daily basis. Thereby, the normal returns are the calculated expected returns under the assumption that the event under consideration did not occur. Various models exist to determine normal returns. These are usually based on past stock price developments over a defined estimation window, a period of 120 days, or similar prior to the event. The models come up with parameter estimates that allow for the calculation of the normal returns and thus the abnormal returns. Finally, for interpretation, the daily abnor-

mal returns need to be aggregated over the event window and to be tested for their statistical significance (MacKinlay, 1997, 14–16).

As mentioned, several models exist to measure the normal performance. In general, these can be classified into two groups – economic and statistical. While the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) are the most common economic models, the market model, the constant mean return model as well as multifactor models can be allocated to category of the statistical models (MacKinlay, 1997, 17–19). Following the discussion by MacKinlay (1997, 17–19), I choose the market model as research methodology for this study. Therefore, below I de-

scribe the steps of the event study when using the market model as normal performance model. The information provided in the following paragraphs refers to (MacKinlay, 1997, 18–24)

The first step is to set the timeline for an event study including the definition of the event window and the estimation window. Therefore, notation is required. The following Figure 2 illustrates the timeline. The subsequent Table 8 provides the related notation.

For this study, I choose the event date to be the date a company publishes its target via a press release or similar formats on its website for the first time. The choice of the event window's length ($L_2$) varies in prior related literature. While Flammer (2013, 769) observes the periods (-1, 0), (-1, 1), (-1, 2), and (-1, 3), Krueger (2014, 16) observes (-5, 5) and (-10,10), and finally, Capelle-Blancard and Petit (2019, 553–54) observe (-1,1) and (-5, 5). However, due to the fact that I only regard first-hand information, I assume that the potential period for information gathering on the market prior to the announcement date is limited. Regarding the posterior end of my event window, I follow Krueger (2014) and Capelle-Blancard and Petit (2019). Consequently, I consider a 7-day period from one day before the event date to 5 days thereafter (-1, 5) as my main event window. Alternative windows are also examined. More information on these follows in the next subchapter. My estimation window (-226, 26) comprises 200 trading days analogous to Krueger (2014, 15) and ends 25 trading days before the event window in order to avoid the event window to influence the normal performance parameter estimates as recommended by MacKinlay (1997, 15).

Once the event date and the lengths of event window and estimation window are defined, the market model is to be applied in order to come up with normal performance parameter estimates. The market model is a statistical, single-factor model that uses a linear relationship, based on a joint normality assumption, to estimate the return of any given security by the return of the market portfolio. For the market portfolio typically, there is a broad-based stock index chosen such as the S&P 500 Index or the CRSP Value Weighted Index. For the purpose of this study the Russell 1000 index, representing the entirety of the companies examined in chapter 6, is selected. The market model, in general form, is composed as follows (MacKinlay, 1997, 18):

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad with : E(\varepsilon_{it} = 0); \, var(\varepsilon_{it}) = \sigma^2_{\varepsilon_i} \quad (3)$$

Thereby, $R_{it}$ and $R_{mt}$ are the returns of security $i$ and the market portfolio at time $t$, respectively. Further, $\varepsilon_{it}$ equals the zero mean disturbance term, $\alpha_i$, $\beta_i$ and $\sigma^2_{\varepsilon_i}$ are the parameters to be estimated by the model.

Given the returns of the individual securities and the market portfolio, those parameters are computed for each security using ordinary least squares (OLS) as estimation procedure. Here, the period within the estimation window is observed. For this study I use the total return index (RI) of Datastream as central source for both the returns of the single securities as well as the market portfolio. Based on these

I calculate the daily total returns in percent. By inserting the derived parameters into the market model, the returns of the individual securities that would have been expected without the occurrence of the event can be approximated within the event window. Considering these and the actually achieved returns $R_{i\tau}$, the abnormal returns $AR_{i\tau}$ for firm $i$ caused by the event under study are derived as follows (MacKinlay, 1997, 20–21):

$$AR_{i\tau} = R_{i\tau} - \widehat{\alpha}_i - \widehat{\beta}_i R_{m\tau} \quad with : \tau = T_1 + 1, \ldots, T_2 \quad (4)$$

For large $L_1$ the variance $\sigma^2(AR_{i\tau})$ of the abnormal return approaches:

$$\sigma^2(AR_{i\tau}) \approx \sigma^2_{\varepsilon i} \quad (5)$$

Continuing from here, the next step is to calculate the cumulative abnormal return (CAR) (MacKinlay, 1997, 21). The abnormal returns within the event window are added up for each company. The $CAR_i(\tau_1, \tau_2)$ is defined as the cumulative abnormal return per security $i$ from $\tau_1$ to $\tau_2$, with $T_1 < \tau_1 \leq \tau_2 \leq T_2$. It is calculated as follows:

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau} \quad (6)$$

For large values of $L_1$, its variance is composed as shown below:

$$\sigma^2_i(\tau_1, \tau_2) = (\tau_2 - \tau_1 + 1) \, \sigma^2_{\varepsilon_i} \quad (7)$$

In order to draw conclusions about the event's impact, the abnormal returns, however, need to be considered across all companies involved. Therefore, one could calculate the average abnormal return ($\overline{AR}_\tau$ or $AAR_\tau$) and the cumulative average abnormal return ($\overline{CAR}(\tau_1, \tau_2)$ or $CAAR(\tau_1, \tau_2)$) with the following formulas (MacKinlay, 1997, 21–24).

$$\overline{AR}_\tau = AAR_\tau = \frac{1}{N} \sum_{i=1}^{N} AR_{i\tau} \quad (8)$$

$$\overline{CAR}(\tau_1, \tau_2) = CAAR(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \overline{AR}_\tau$$

$$= \frac{1}{N} \sum_{i=1}^{N} CAR_i(\tau_1, \tau_2) \quad (9)$$

with variances for large $L_1$:

$$var(\overline{AR}_\tau) = \frac{1}{N^2} \sum_{i=1}^{N} \sigma^2_{\varepsilon_i} \quad (10)$$

$$var(\overline{CAR}(\tau_1, \tau_2)) = \frac{1}{N^2} \sum_{i=1}^{N} \sigma^2_i(\tau_1, \tau_2) \quad (11)$$

In this study, I test the statistical significance of the $CAR_i(\tau_1, \tau_2)$ across all companies for the chosen event windows following the recommendation of The Truestees of
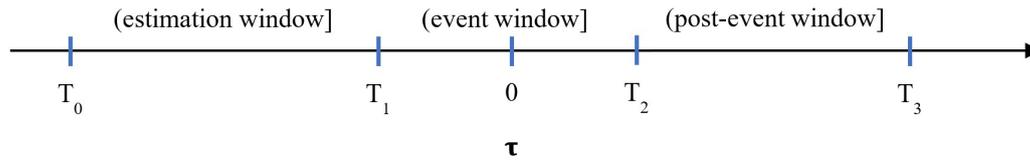
**Figure 2:** Timeline for an event study (MacKinlay, 1997, 20)

**Table 8:** Notation of timeline for an event study (MacKinlay, 1997, 19)

| Timeline variable | Notation |
|---|---|
| event date | $\tau = 0$ with: $\tau \triangleq$ event time |
| event window | $\tau = T_1 + 1$ to $T_2$ |
| estimation window | $\tau = T_0 + 1$ to $T_1$ |
| post-event window | $\tau = T_2 + 1$ to $T_3$ |
| length event window | $L_1 = T_2 - T_1$ |
| length estimation window | $L_2 = T_1 - T_0$ |
| length post-event window | $L_3 = T_3 - T_2$ |

Table notes: This table presents the notation required to define the event date, event window, and estimation window of an event study.

Princeton University (2007) and perform an intercept only regression model with $CAR_i(\tau_1, \tau_2)$ as dependent variable using heteroscedasticity-robust standard errors.

Similarly, to Flammer (2013), Krueger (2014), and Capelle-Blancard and Petit (2019), subsequently to measuring the direct impact of the announcements I apply a regression-based approach to determine if certain content or formal characteristics of the announcements have an impact on the cumulative abnormal returns over my main event window ($CAR_{ij}(-1, 5)$). Thereby, the variables which were found in chapter 6 to be significantly related with the company's net zero target announcements are used as control variables. The multiple linear regression model is built up as follows:

$$CAR_{ij}(-1, \ 5) = \alpha + \Gamma'X_j + \Lambda'Y_i + \varepsilon_{ij} \qquad (12)$$

where the firms are indexed by $i$ and the events are indexed by $j$. Next, $\alpha$ represents the intercept, $X_j$ is a vector of an announcement's characteristics, $Y_i$ represents the vector of the firm-specific variables derived in chapter 6, and $\varepsilon_{ij}$ is the error term. The announcement-specific characteristics are defined and explained in chapter 5. The regression coefficients in $\Gamma'$ and $\Lambda'$ are the ones of interest. Similar to the logistic regression I use a 98% winsorization in order to limit the influence of extreme values (e.g., Krueger, 2014). However, here I only winsorize the control variables and the dependent variable. The values of the ESG score variables are assumed not to bear outliers. Also, to contradict heteroscedasticity I apply robust standard errors (e.g., Flammer, 2013) and perform tests due to Cameron and Trivedi (1990). Furthermore, I perform collinearity diagnostics using VIFs (e.g., Matsumura et al., 2014) and test the residuals to be normally distributed by using the Skewness and Kurtosis test provided

in Stata (D'Agostino, Belanger, & D'Agostino, 1990; Royston, 1992).

7.2. Event study results

To draw conclusions about the investors' awareness on the announcement of net zero targets I test the cumulative abnormal return across the companies for statistical significance. Thus, the null hypothesis is that the $CAR_i(\tau_1, \tau_2)$, on average, equals zero. Any significant divergence - positive or negative - from random returns would imply an impact of net zero announcements on the capital market. For an initial overview of the capital market reaction, the following Figure 3 shows the development of the daily *CAARs* over a 21-day period from 10 days before to 10 days after the event date. Thereby, the figure allows for a comparison of market developments inside and outside the observed event windows.

Figure 3 generally suggests a negative impact on the capital market by net zero announcements. In particular, the period starting from the day immediately before the event date until around day 6 thereafter shows a noticeable negative development of the *CAARs*, except on day 2. Table 9 reports the statistical results derived from the event study.

The empirical results in Table 9 confirm the conclusions of Figure 3. The publication of net zero targets leads to negative stock returns around the event date. For all three event windows investigated, the intercept only model yields a negative intercept, which corresponds to *CAARs* $(\tau_1, \tau_2)$. For the event windows (-1, 5), the main event window, and (-5, 5), even a statistically significant negative intercept of -0.839% and -0.89%, respectively, is obtained. Accordingly, investors seem to be aware of net zero targets and to evaluate corresponding ESG investments as not profitable, at least in short term. Converted into absolute numbers, a drop in share price of
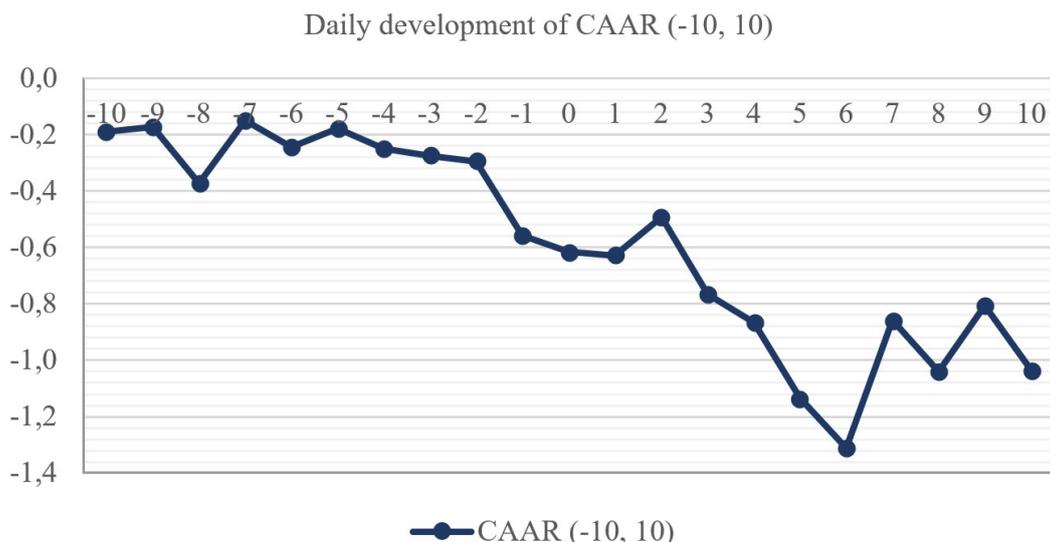
**Figure 3:** Development of daily CAARs over 21-day period

**Table 9:** Event study results

| | Event windows | | |
| | **Main event window** | Alternative event windows | |
| | **(-1, 5)** | (-1, 1) | (-5, 5) |
|---|---|---|---|
| $CAAR(\tau_1, \tau_2)$ | **-0.839** | -0.333 | -0.890 |
| P-value | **0.049**** | 0.222 | 0.094* |
| N | **122** | 122 | 122 |

Table notes: This table presents the results derived from an intercept only regression using robust standard errors with CAR as dependent variable for different event windows. CAAR equals the derived intercept in percent. The estimation window is (-226, -26). The shown p-value shows the statistical significance testing the null hypothesis that the mean CAR is equal to 0. *, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

0.839% relative to the median[4] market capitalization in the Russell 1000 index of USD 15.5 billion would translate into approximately USD 130 million (FTSE Russell, 2021). One could therefore also assign an economic significance to the impact on the share price. Overall, by this finding hypothesis H2a can be confirmed. Furthermore, this result is in line with the one by Fisher-Vanden and Thorburn (2011, 431). They find that announcements concerning a company's participation in voluntary environmental programs, more specifically the EPA's Climate Leaders program, and subsequent announcements of emission reduction targets lead to significant drops in stock prices of -1.0% (-1.1%) on average.

It should be noted, however, that this evaluation is based on equal treatment of all announcements and targets contained therein, although the ESG score in chapter 5 indicates, among others, potential differences in the actual level of ambition and the seriousness of target pursuit among net zero

target announcements. In the following subchapter, I will therefore take a closer look at the actual content of the announcements.

7.3. Regression specification

In this subsection, I now examine the impact of the ESG score variables defined in chapter 5 on investors' investment decisions. To this end, I regress the ESG score variables as independent variables on the cumulative abnormal return of my main event window ($CAR_{ij}(-1, 5)$) using a multiple linear regression model. The significantly correlating determinants of voluntary net zero announcements from chapter 6.3 function as control variables. This is necessary as, for example, different levels of ambition might have different meanings in different industries. In the following, I will first summarize the included variables. Subsequently, I will present the results.

7.3.1. Variable definition

Table 10 below shows once again the variables used. The associated definitions are given in chapters 5 and 6.2.

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[4]Due to the large difference between median and mean (USD 411.9B (FTSE Russell, 2021)) of market capitalization, a strongly skewed distribution can be assumed. Thus, the median is chosen as the reference value.

**Table 10:** Overview of variables in multiple linear regression model

| Dependent variable $CAR_{ij}(-1, 5)$ | ESG score variables $X_j$ | Control variables $Y_i$ |
|---|---|---|
| | Target level of ambition (*target_amb*) | Country profile (*non_US*) |
| | Target supporting characteristics (*target_su*) | Industry profile (*GICS_sensitive*) |
| | Announcement length (*ann_l*) | Firm size (*ln_total assets*) |
| | Announcement headline (*ann_h*) | Innovation (*innovation*) |
| | | Financial constraints (*div_pay*) |
| | | Board size (*board_size*) |
| | | Environmental score (*enscore*) |

Table notes: This table presents the variables used to estimate the correlation between the ESG score variables and the cumulative abnormal returns over the main event window. Chapter 5 defines all ESG score variables. Table 4 defines all control variables.

### 7.3.2. Results

Table 11 provides the descriptive statistics of the dependent and independent variables included in the regression. The number of observations, mean, median, and standard deviation are displayed. In combination with Appendix 5 which shows the sample distribution on indicator level one can see that the cross-sample mean value of the target ambition variable (*target_amb*) (3.63) corresponds roughly to the middle of the maximum value of 7 that defines the highest level of ambition. This overall moderate level of ambition is characterized by predominantly long-term plans (68.07%) and climate strategies aiming at a partial consideration of the scopes of emission (58.82%). Furthermore, in the announcements, the companies describe the implementation of about half of the indicators included in the variable *target_su,* on average (3.2 points out of 6). In this context, interim targets (57.14%) are mostly defined, future reporting processes are mostly not mentioned (61.34%), third parties are mostly involved (79.83%), specific capital is mostly not allocated (73.11%), past activities are mostly referenced to (67.23%), and governance by a C-suite executive alone is the option indicated the most (61.34%). The announcements' headlines may predominantly be seen as concise (68.07%) and the included text is rather long (73.95%).

Table 12 presents the correlations among the variables included. Among the otherwise unremarkable associations, the high correlation between *length_2* and *length_3* ($\rho = -0.85$) is noteworthy. Both variables, however, are dummy variables representing the indicator categories long and medium of the ESG score variable "announcement length" (*ann_l*) and are thus in a natural relationship. A strong correlation is therefore not surprising. Furthermore, it should be noted that all VIFs - not reported - are lower than 10. Consequently, multicollinearity might be seen as uncritical (Wooldridge, 2013, 98).

Table 13 finally shows the coefficients derived from the multiple linear regression models performed. While model (1) only includes the ESG score variables, model (2) only examines the firm-level control variables. Model (3) combines

all variables. From Table 13 it can be seen that none of the ESG score variables is significantly correlated with the cumulative abnormal return over the main event window (-1, 5). Merely the two control variables *non_US* and *board size* seem to have a weak significant influence. Also considering the adjusted $R^2$, it can be concluded that very little to no variance is explained by the ESG score variables. A similar result is obtained by correlating the cumulative abnormal return with the individual ESG score indicators, as shown in Appendix 6. This implies that it is not the aggregation of these to the ESG score variables that is the reason for the low predictive power. In summary, it seems that investors' awareness is not influenced by the actual content of the announcements, but more by the fact of setting a net zero target. Hypothesis H2b is therefore rejected.

## 8. Discussion

Taking the results of the two analyses into account, this chapter serves to discuss them further. To this end, I first briefly summarize the core findings, discuss implications based on them, point out limitations of the study, and conclude with recommendations for future research.

### 8.1. Summary and practical implication

The results from chapter 6 show that several determinants identified in previous literature as relevant to voluntary CSR reporting in general, can also be projected to the specific, environmental CSR topic of net zero targets. Thereby, the findings are to large extent in line with previous literature and suggest that net zero targets might be motivated by similar factors than other CSR topics. However, due to the large set of variables correlating with net zero pledges, many underlying theories could be used to explain their content. The complexity involved in this topic is indicated. Chapter 7 then suggests that investors generally react negatively or at least cautiously to such climate targets. Considering this finding stand-alone one could see this to support literature that argues CSR engagements to be costly and not valued by

**Table 11:** Descriptive statistics of variables in multiple linear regression model

|  | Variables | N | Mean | p50 | $\sigma$ |
|---|---|---|---|---|---|
|  | *Dependent variable* |  |  |  |  |
|  | cumulative_abnormal_return | 119 | -0.92 | -0.35 | 4.48 |
|  |  |  |  |  |  |
|  | *Independent variables* |  |  |  |  |
| ESG score variables | target_amb | 119 | 3.63 | 3 | 1.52 |
| ($X_j$) | target_su | 119 | 3.20 | 3.33 | 1.39 |
|  | ann_h | 119 | 0.68 | 1 | 0.47 |
|  | length_2 | 119 | 0.20 | 0 | 0.40 |
|  | length_3 | 119 | 0.74 | 1 | 0.44 |
|  | non_US | 119 | 0.08 | 0 | 0.27 |
|  | GICS_sensitive | 119 | 0.25 | 0 | 0.44 |
| Corporate determinants as | ln_total_assets | 119 | 17.19 | 17.11 | 1.58 |
| control variables | innovation | 119 | 2.73 | 0 | 5.33 |
| ($Y_i$) | div_pay | 119 | 0.76 | 1 | 0.43 |
|  | board_size | 119 | 11.29 | 11 | 2.08 |
|  | enscore | 119 | 61.80 | 65.57 | 22.20 |

Table notes: This table presents the descriptive statistics for the dependent and independent variables in the multiple linear regression model. The variables length_2 and length_3 represent dummy variables for the announcement's length indicator categories medium and long, respectively. The category short is the reference length. Chapter 5 defines all ESG score variables. Table 4 defines all control variables. The dependent and continuous control variables of the model are winsorized at the 1st and 99th percentiles.

**Table 12:** Correlations among variables in multiple linear regression model

|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAR | 1 | - |  |  |  |  |  |  |  |  |  |  |  |
| target_amb | 2 | 0.02 | - |  |  |  |  |  |  |  |  |  |  |
| target_su | 3 | 0.09 | **0.29** | - |  |  |  |  |  |  |  |  |  |
| ann_h | 4 | 0.00 | -0.00 | -0.06 | - |  |  |  |  |  |  |  |  |
| length_2 | 5 | -0.11 | -0.06 | **-0.44** | -0.10 | - |  |  |  |  |  |  |  |
| length_3 | 6 | 0.13 | **0.18** | **0.54** | 0.05 | **-0.85** | - |  |  |  |  |  |  |
| non_US | 7 | **-0.19** | 0.01 | -0.02 | 0.06 | 0.09 | -0.05 | - |  |  |  |  |  |
| GICS_sensitive | 8 | -0.01 | **-0.33** | 0.02 | 0.02 | -0.00 | 0.08 | -0.09 | - |  |  |  |  |
| ln_total_assets | 9 | **0.22** | 0.07 | **0.37** | 0.06 | **-0.20** | **0.18** | **-0.16** | -0.01 | - |  |  |  |
| innovation | 10 | -0.13 | **0.26** | -0.02 | 0.05 | -0.01 | 0.04 | 0.03 | **-0.25** | **-0.22** | - |  |  |
| div_pay | 11 | **0.20** | -0.15 | -0.03 | 0.03 | -0.10 | 0.06 | -0.06 | **0.19** | **0.32** | **-0.46** | - |  |
| board_size | 12 | **0.24** | -0.09 | **0.18** | 0.09 | -0.02 | 0.05 | -0.10 | 0.11 | **0.43** | **-0.25** | **0.28** | - |
| enscore | 13 | 0.15 | -0.03 | **0.21** | -0.04 | **-0.27** | **0.23** | -0.06 | 0.12 | **0.46** | **-0.30** | **0.44** | **0.34** |

Table notes: This table shows the Pearson pairwise correlations for all variables in the multiple linear regression model. Bold numbers denote statistically significant correlations at the 10 percent level. Chapter 5 defines all ESG score variables. Table 4 defines all control variables. The dependent and continuous control variables of the model are winsorized at the 1st and 99th percentiles.

investors (e.g., Fisher-Vanden & Thorburn, 2011; Krueger, 2014). However, my study provides new insights for alternative explanations considering the fact that this reaction does not seem to be affected by different levels of ambition or credibility as defined by the ESG score developed.

In particular, the fact that indicators that might be ex-

pected to increase a target's credibility, such as interim targets or third-party involvements, do not impact investors' reactions in a positive direction raises questions. Considering the negative market reaction alone, one could conclude that the cost aspect associated with the realization process prevails in the assessment of the announcement or that advantages such

**Table 13:** Regression coefficients in multiple linear regression model

| Dependent variable<br>cumulative_abnormal_return | ESG score only<br>Model (1)<br>Coef. / t-stat | Control variables only<br>Model (2)<br>Coef. / t-stat | Combined<br>Model (3)<br>Coef. / t-stat |
|---|---|---|---|
| target_amb | -0.035 | | 0.039 |
| | (-0.13) | | (0.12) |
| target_su | 0.089 | | -0.122 |
| | (0.23) | | (-0.29) |
| ann_h | -0.016 | | -0.107 |
| | (-0.02) | | (-0.10) |
| length_2 | -0.159 | | 0.521 |
| | (-0.09) | | (0.29) |
| length_3 | 1.026 | | 1.647 |
| | (0.68) | | (0.94) |
| non_US | | -2.650* | -2.623* |
| | | (-1.77) | (-1.73) |
| GICS_sensitive | | -0.709 | -0.809 |
| | | (-0.79) | (-0.80) |
| ln_total_assets | | 0.233 | 0.222 |
| | | (0.79) | (0.66) |
| innovation | | -0.027 | -0.043 |
| | | (-0.23) | (-0.34) |
| div_pay | | 1.242 | 1.213 |
| | | (1.12) | (1.03) |
| board_size | | 0.331 | 0.350* |
| | | (1.66) | (1.74) |
| enscore | | -0.001 | -0.005 |
| | | (-0.05) | (-0.28) |
| Constant | -1.786 | -9.085** | -9.752** |
| | (-0.95) | (-2.04) | (-2.02) |
| N | 119 | 119 | 119 |
| adjusted R$^2$ | -0.027 | 0.055 | 0.023 |

Table notes: This table shows the coefficients and t-statistics of all variables in the multiple linear regression models estimating the cumulative abnormal return upon a net zero target announcement. Model (1) only includes the ESG score variables, model (2) only includes the control variables, and model (3) includes all variables. The variables length_2 and length_3 represent dummy variables for the announcement's length indicator categories medium and long, respectively. The category short is the reference length. Chapter 5 defines all ESG score variables. Table 4 defines all control variables. The dependent and continuous control variables of the model are winsorized at the 1$^{st}$ and 99$^{th}$ percentiles. The model is performed with robust standard errors. It is not controlled for industry-fixed effects since this results in multicollinearity issues with the variable GICS_sensitive. Also, no significant correlation for any of the GICS sectors could be observed. Controlling for time-fixed effects on a yearly basis does not lead to significant correlations, wherefore I refrain from using it. *, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

as long-term competitiveness and more efficient processes are simply not seen or not yet seen. Considering this result in conjunction with its robustness even against supposedly more reliable climate strategies, a further conclusion can be drawn. That is, little confidence is placed in the actual implementation of targets. This could be due, on the one hand, to a lack of transparency and accuracy of the measures described and, on the other hand, to a lack of enforceability and actual

accountability of companies to investors. The insights gained from the analysis of the content of the announcements, as described in chapter 5, generally confirm the lack of accuracy. It is shown that companies often do not clearly describe how a net zero status is to be achieved. For example, the question of whether this should be reached primarily through carbon reduction measures, or the purchase of carbon offsets often remains unanswered, although this difference is critical. Pur-

chasing offsets, although needed to zero out residual emissions that cannot be eliminated, is often criticized when climate strategies rely on them to a larger extent as it does not cause companies to change current processes (Kolk & Pinkse, 2005, 9–11). A company might appear to be environmentally responsible without reducing the its impact (Dhanda & Hartman, 2011, 126). So, if the implementation process is not clearly described, an investor cannot assume that processes will be lastingly optimized and that long-term benefits such as more efficient and sustainable processes will arise.

Moving on to the issue of enforceability and accountability, the following consideration is relevant. Assuming a company clearly defines which goal is to be achieved by when and with which strategy, how can the actual implementation be guaranteed to investors? Does a company really have to fear sanctions in 2050 if it fails to achieve a voluntary climate target committed to around 2020? The results of this study might suggest that investors doubt it. Lin (2021, 27–35) discusses various enforcement mechanisms on this question. More specifically, he examines securities fraud litigation, contractual arrangements, and consumer protection actions as options. While these indeed might help to enforce companies going through their climate pledges, Lin (2021, 61) concludes that it is challenging to enforce such targets due to their voluntary, long-term, and aspirational nature. Also, these mechanisms are just in the beginning to be tested for their applicability.

In summary, transparency and legal enforceability of net zero pledges might be two factors that could positively influence investors' perceptions. However, the results of the study imply that so far these are not sufficient enough to direct investors' attention towards the benefits incorporated and still bear a need for improvement.

### 8.2. Limitations and future research

My study is subject to limitations. First, I only use the market model as estimation model for calculating normal returns within the event window. This leads to the fact that the resulting abnormal returns and the conclusions based on them depend on the predictive power of the model design. Future research could benchmark my findings using other models such as the CAPM.

Second, one could criticize the sole consideration of short corporate releases as a source. It can be argued that press releases are particularly characterized by self-optimizing representations by the companies and therefore tend to receive little attention or credibility from investors. The results could be influenced from the outset by a skeptical attitude of investors towards them (Capelle-Blancard & Petit, 2019, 544). Supporting this hypothesis, Capelle-Blancard and Petit (2019, 554) find that press releases related to environmental CSR topics do not influence market movements. Further, it could be argued that these provide only limited opportunity for detailed descriptions of climate strategies and thus are not suitable for content analyses. While these points do indeed have their importance and should be taken into account in the interpretation, despite their drawbacks, press releases

are probably still the best possible choice. Any supposedly more objective secondary sources can only reflect the published forward-looking targets and thus are time-delayed, as are many longer CSR reports such as sustainability reports that usually follow a regular schedule. Furthermore, short releases offer the possibility to draw market-specific conclusions isolated to a specific topic. Contrary, sustainability reports, for example, also describe other non-climate specific initiatives that can also influence a market reaction. Hence, the latter cannot or only hardly be attributed to a single item of information.

Another underlying assumption of my study that might be seen as a limitation is that the study only considers short-term capital market reactions. This means that all conclusions presented refer to the changes in the total stock returns of the companies considered within a short observation window. Hence, the direction of the assessment of companies with net zero targets could change as the target is approached and milestones are reached or missed.

The latter limitation, at the same time, entails a recommendation for future research, the long-term financial performance assessment of companies with net zero pledges. Investors may evaluate companies differently if progress can be verified. This could be done in the form of a stock portfolio comparison of companies with and without these commitments.

### 9. Conclusion

Motivated by the scientific evidence of the urgent need to transform the economy towards net-zero emissions and the increasing number of net zero commitments in the corporate sector, in this study I examine the determinants as well as the capital market consequences of them. The objective is to understand which characteristics of a company lead to this voluntary effort and to what extent capital allocation decisions of investors are affected thereby.

The results reveal that corporate net zero pledges are significantly associated with seven of the analyzed determinants, namely, a company's country profile, industry profile, firm size, degree of innovation, financial constraints, board size, and finally a company's past environmental performance. While, in general, it seems that explanations for voluntary CSR disclosure can be transferred to voluntary net zero target commitments, the large body of correlating determinants exemplify the high complexity involved. Several underlying theories can be supported.

The company size and the environmental sensitivity of the industry profile appear to be positively correlated with a target announcement thus supporting the legitimacy theory in that companies seek to justify their existence and operations to society. Furthermore, the results suggest that especially companies that have been shown to be innovative and environmentally friendly in the past are geared towards giving the impression of long-term corporate orientation and sensitivity towards issues besides financial core activities. Furthermore, the likelihood of an announcement

seems to be positively correlated with a company's location outside the US and the size of its board. This could be seen as the stakeholder orientation being greater outside the US and a larger board leading to more diversified knowledge enabling a more efficient coverage of global challenges, respectively. The positive correlation between financial constraints in terms of non-payment of dividends in the year preceding the target setting could imply that companies withhold voluntary profit distributions to prepare for the upcoming investments required.

The analysis of the capital market consequences shows a significant negative development of stock prices as a result of net zero announcements. The cumulative abnormal returns average -0.839% over the main event window (-1, 5). This result could support the hypothesis that investors, at least in the short run, consider related ESG investments as not profitable. A content-based analysis of the announcements shows that the actual ambition of a target, several items described to support the credibility of the target, as well as formal characteristics of the announcement do not seem to have an impact on the investors' assessment.

Overall, if one wants to draw a conclusion based on the results of both parts of the analysis, one could state the following. The increasing number in net zero commitments implies the intention of companies to communicate to society that the importance of the transformation towards a net zero economy has been recognized. This seems to be particularly the case when companies are under increased scrutiny due to their size and industry affiliation, or when previous company orientations and internal structures support such a transformation. Nonetheless, it appears that investors are aware of the high costs involved and the risk of greenwashing and are acting cautiously in consequence. Two factors that could improve investor confidence are an improvement in transparency about the actual realization process being pursued and an enhancement of enforcement options. As a result, climate targets under aspirational slogans such as Amazon's (2021) "Further and Faster, Together" might receive more positive recognition on the capital market.

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# Ethical Problems in Family Firms

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**Abstract**

Various articles suggest that particular ethical problems occur in family firms, but until now, no attempt has been made to collect and structure available information on them. Based on the systematic review of 110 articles from peer-reviewed academic journals, we show that family firms face a set of unique ethical dilemmas and define those. They can either be family-based or business-based and we uncover the antecedents and outcomes of the processes that family firms employ to solve them. When family firms manage to deal with ethical problems appropriately, they will be rewarded for that in various ways, including improved financial performance and the preservation of potentially all SEW dimensions.

*Keywords:* Family firms; Business ethics; Socioemotional wealth.

## 1. Introduction

### 1.1. Problem and Relevance

Family firms are the most prominent form of organizations worldwide (La Porta, Lopez-De-Silanes, & Shleifer, 1999). They can be considered as the *"backbone of corporate life, across nations, remaining a cornerstone of socio economic development"* (Poutziouris, Smyrnios, & Klein, 2008, p. 1). They account for up to 85% of businesses in OECD countries, and 70-80% of all businesses in Europe (Kraus, Pohjola, & Koponen, 2012). They are even more common in Germany, where 94% of all corporations are family firms (Wolter & Sauer, 2017). Given their economic importance, it is somewhat surprising that family firms have remained relatively understudied for quite some time (Steier, Chrisman, & Chua, 2004) and various scholarly fields have only in the past decades since the late 1980s started to dedicate scientific work to studying them. Family business research has rapidly gained importance since then (Rovelli, Ferasso, De Massis, & Kraus, 2021). Family firms are unique because of the interplay of the three interconnected systems of family, ownership, and business that exist within them and can overlap

to varying degrees in different family firms (Davis, Hampton, & Lansberg, 1997). A family firm is special because a family is involved in its ownership and management, and this family typically has the intention to pass the business on to the next generation (Litz, 1995; Lubatkin, Schulze, Ling, & Dino, 2005). Some traditional ideas from business and management studies may not hold entirely true for family businesses because of distinct family firm characteristics like their constantly present inclination to preserve socioemotional wealth (SEW) (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010) along with particular goals (Basco, 2017) and strategies (Gudmundson, Hartman, & Tower, 1999). It often remains unclear which theories are appropriate to examine and describe family firms. Contradicting beliefs exist, for example, regarding whether stewardship, stating that family firm managers will serve the greater good of the organization, or agency theory, stating that family firm managers will exclusively maximize the utility of the owning family, is better suited to explain their behavior (Azizi, Bidgoli, Maley, & Dabiç, 2022; Le Breton-Miller & Miller, 2009; Madison, Kellermanns, & Munyon, 2017).

Another emerging field in academics is business ethics (Drucker, 1981). Especially with the many recent scandals of companies like Enron, Wirecard, and VW that have been covered in tremendous amounts of negative headlines, the topic of business ethics has rapidly gained prominence (Blodgett, Dumas, & Zanzi, 2011). Since, as stated previously, many

classical research approaches from non-family firms cannot simply be transferred and applied to family businesses, the question of what business ethics look like in family firms arises.

The field connecting the academic research streams of family businesses and business ethics is even less developed than the two are individually, and many of its aspects are yet to be investigated (Sharma & Sharma, 2011; Van Gils, Dibrell, Neubaum, & Craig, 2014; Vazquez, 2018). However, especially in recent years, quite some work has happened there, and Vazquez (2018) systematically structured and synthesized other scholars' work about ethical differences between family and non-family firms. The picture of ethics in family firms is not solely positive as, for example, their social performance is often found to be worse than that of their non-family counterparts (Cruz, Larraza-Kintana, Garcés-Galdeano, & Berrone, 2014; Cuadrado-Ballesteros, Rodríguez-Ariza, García-Sánchez, & Martínez-Ferrero, 2017; El Ghoul, Guedhami, Wang, & Kwok, 2016) and many scholars suggest that some unique business ethics dynamics come into play in family firms (Blodgett et al., 2011; Mitchell, Agle, Chrisman, & Spence, 2011). These can introduce family- and business-based ethical problems that will severely harm the performance and longevity of family firms when they fail to solve them. This thesis will provide structured information to understand those problems which is essential for making them manageable. That is in turn crucial for the global economy's well-being because of the critical role that family firms play there.

## 1.2. Objective

To shed further light on family business ethics, we will tackle one of the limitations and future research avenues from Vazquez's (2018) study with this thesis. After comparing family and non-family firms from an ethical point of view, he acknowledged that a separate study is required to examine ethical dilemmas faced by family firms based on the existing literature. Various articles suggest that particular ethical problems occur in family firms, but until now, no attempt has been made to collect and structure available information on them. Accordingly, neither have the processes that family firms employ to solve ethical problems been properly investigated, but some of their antecedents and outcomes can nevertheless be found in available empirical and conceptual research.

Therefore, the objective of this thesis is to answer the following two research questions regarding family business ethics by consolidating the existing literature published in various fields like management and economics but also sociology and psychology:

- How can the ethical problems encountered by family firms be categorized?

- What are the antecedents and outcomes of family firms' endeavors to deal with ethical issues?

We found out that the ethical problems occurring in family firms are manifold and can be either family- or business-based. In order for family firms to deal with them, aspects like family involvement and values are essential. Furthermore, some mediating factors come into play within family firms' processes to solve ethical problems, translating their efforts or omissions regarding ethics into financial and social performance.

Our insights regarding what particular ethical problems occur in family firms and what measures they currently employ to solve them could be crucial for family firms in order to gain the ability to mitigate such issues appropriately. This is notably interesting for family firm owner-managers, employees, and advisors. It will provide them with the information they require to detect ethical problems in their firms and suggest some starting points to successfully manage them. Many family businesses fail (Aronoff, 1999) and the probability of failure is much higher for family firms because they sometimes make decisions that enhance SEW and benefit the family but harm the business (Gómez-Mejía, Haynes, Núñez Nickel, Jacobson, & Moyano-Fuentes, 2007). Some of the ethical dilemmas we examine in this thesis can be regarded as so drastic that they might be a cause for a family firm's failure if they are not handled appropriately. Our findings are also relevant to business ethics and family business scholars as we provide them with an overview of the current status of research around family business ethics; we additionally make suggestions regarding which areas of their fields should be further examined in the future.

The remainder of this thesis is structured as follows: We will continue by explaining the methodology we employed to derive our sample of 110 articles from peer-reviewed academic journals. Subsequently, we will answer our research questions based on an analysis of the sample. The chapter containing our results starts with definitions and descriptive statistics. This part will be followed by an elaboration of our synthesized findings regarding which diverse ethical problems family firms face and what is known about the processes they employ to solve them. Finally, we will present our findings' theoretical and practical implications and describe this study's limitations and avenues for future research before finishing this thesis with a short conclusion.

## 2. Methodology

In line with Vazquez's (2018) suggestion that the ethical problems in family firms can and should be studied this way, we decided to conduct a systematic review to answer our research questions. Since various journals have already published articles dealing with family firm ethics that are relevant to our topic, but this research had not been consolidated previously, we believe that a structured review was the appropriate method for us to use. The existent research is somewhat fragmented and somehow had to be tied together in a way that would be replicable. We, therefore, needed to find a possibility to collect relevant literature for our topic while assuring not to miss anything important here before we could

turn to evaluating and analyzing our sources. Altogether, this is in line with the aspects that, according to Cooper (1982) and Tranfield, Denyer, and Smart (2003) make it rational and demand for a research question to be answered through a structured review. This review can then pave the way for further empirical research since it creates some kind of a joint starting base for that. An empirical approach would not have been suitable to answer our research questions because our goal was to introduce broad and general new concepts; collecting sufficient information for that in a single study of this scope is not possible.

In our review, we followed the process defined by Xiao and Watson (2019) which consists of formulating the problem to be solved, developing a review protocol, conducting the literature search, deciding which sources should be included in the final sample, and extracting, analyzing and synthesizing data from them; the process ends with the creation of a report presenting the systematic review. It is very similar to the processes outlined by Cooper (1982), Denyer and Tranfield (2009) and Tranfield et al. (2003).

Before starting our literature search, we decided to only search for relevant sources online. The fields that are relevant to our research have only emerged in the past years, and we, therefore, believed that vital information from them should be available online in a digitized format. Additionally, we wanted our results to be relevant and hold true for current times, so it did not make much sense for us to rely on sources that were too old to have been published online.

We then decided to conduct our search in multiple databases to ensure that we would find as many high-quality sources that are relevant to us as possible. At first, we used the EBSCO Discovery Service to search for relevant literature. This search was complemented by another one that we conducted in Scopus. EBSCO and Scopus are both reliable databases that contain immense amounts of academic literature from various research fields. To identify relevant literature, we combined the aspects of a corporation being a family firm and an ethics component being present there to develop our search term. We came up with the following search string that includes Boolean operators and also accounts for scholars using synonyms for the words "family firm" and "ethics" in their research:

("family firm*"OR „family business" OR „family compan*" OR „family enterprise" OR „family manag*" OR „family control*" OR „family owne*" OR „founding family" OR „family influence*" OR „family govern*" OR „family-led" OR "privately held" OR "privately-led" OR "private firm" OR "private enterprise" OR "private company") AND (ethic* OR moral)

We used this search string to search in the title, abstract, and keywords of documents and conducted our searches at the beginning of April 2022. The search in EBSCO initially yielded 3050 results. Further filtering criteria were applied to ensure that only high-quality ones would be considered later on. We chose to screen only articles from English peer-reviewed academic journals for their relevance. We exclusively considered journals here that received a ranking score

of at least 3 in the CABS Academic Journal Guide. For journals that were not ranked there, we checked their score in the VHB journal guide and admitted those that received a ranking score of B or better. Only for articles that focused very specifically on the topics of our research questions, journals with a ranking of 2 or C were accepted. We defined a period from 1960 until March 2022 and only included articles that were published within that time frame. We did not set filters regarding the geographic settings or methods used in the studies and therefore admitted qualitative, quantitative, and conceptual ones from all over the world.

Applying our filters reduced the number of results to 826. EBSCO then automatically deleted some duplicates, reducing the sample to a size of 256. From that, we found 55 further duplicates, which we eliminated. We read the titles and abstracts of the 202 leftover articles and decided to keep 69 for full-text screening. After obtaining and reading the full text of these articles, those that did not focus on family firms were excluded, just as some that were not related to ethics or morality in any regard. We then arrived at a final amount of 55 articles from EBSCO that we deemed relevant for our later analysis.

We used the identical search string for a subsequent search in Scopus. Initially, this search generated 4377 results. We then applied the same inclusion and exclusion criteria as we did for the EBSCO search to this one and decided to only include journals from the fields of Business, Management & Accounting; Social Sciences; Economics, Econometrics & Finance; Psychology and Decision Sciences, which reduced our results to an amount of 583. We then excluded duplicates that were already obtained through the EBSCO search and ended up with 476 articles. After scrutinizing their titles and abstracts for relevance, we reduced our sample to 42 articles. Thirty-five of those were regarded as relevant for our analysis after we obtained the full texts of all 42 articles and read them.

As suggested by Denyer and Tranfield (2009), we also searched for relevant working papers because of the nascent character of research on family business ethics in both databases to complement our searches. However, this yielded no additional relevant results.

To further ensure that we would obtain all relevant sources, we conducted a backward search, which Cooper (1982) calls the ancestry approach, and could find 18 further articles. Through a forward search, which is classified as the descendency approach by Cooper (1982), we finally discovered two additional articles that we deemed essential for our research. Using these techniques to identify relevant literature was also suggested by Webster and Watson (2002). Our whole literature search process is visualized in Table 1.

In total, we ended up with 110 relevant articles that were subsequently analyzed, we have included an overview of their main findings in Table 7 in the Appendix. We used EndNote to store and organize our literature as recommended by Denyer and Tranfield (2009). We collected our key findings in an Excel table and a corresponding word document, based on which we then synthesized them and created this report.

**Table 1:** Methodological Approach

| Results | EBSCO | Scopus | Total |
|---|---|---|---|
| After Search in title, abstract and key words | 3050 | 4377 | 7427 |
| After applying inclusion and exclusion criteria | 826 | 583 | 1409 |
| Duplicates | 625 | 107 | 731 |
| After deleting duplicates | 202 | 476 | 678 |
| After screening article titles and abstracts | 69 | 42 | 111 |
| After reading complete articles | 55 | 35 | 89 |
| Articles found through backward search | 17 | 1 | 19 |
| Articles found through forward search | 2 | // | 2 |
| Final sample size | 72 | 38 | 110 |

Source: Own illustration.

## 3. Results

### 3.1. Key Definitions

#### 3.1.1. Family Firm

There is little clarity and consensus among scholars regarding what criteria an organization must meet to classify as a family firm (Vazquez, 2018) and interestingly, not all firms that researchers sometimes classify as family firms view themselves as such (Zellweger, Kellermanns, Eddleston, & Memili, 2012). However, there are some attributes on which almost all researchers agree. There must be an overlap between a family and a business, meaning that this family has some level of control over the firm (Zellweger, 2017). It must be involved in the firm's management and has to have a major stake in its ownership (Davis et al., 1997; Litz, 1995). Many, but not all, definitions require that at least two family members, if not more, must be present in a firm's management team for it to be regarded as a family firm (Campopiano & De Massis, 2015). Since the relevant literature on our topic is still relatively scarce and evolving, we have decided to use a rather broad definition of family firms in our work. For a corporation to be considered by us as a family firm, it is therefore sufficient that a single family holds a majority of its ownership so that it receives controlling power. Researchers work with different thresholds regarding what percentage of ownership must be in the hands of a single family here; such a difference is observable between the work of Campopiano and De Massis (2015) (10%) and Dick, Wagner, and Pernsteiner (2021) (50%) for example. In line with the definitions used by Kim, Haider, Wu, and Dou (2020) and Lamb and Butler (2018), we have decided that in large publicly traded corporations, even 5% could suffice.

#### 3.1.2. Business Ethics and Ethical Problems

Just as the concept of family firms, also that of business ethics can be difficult to grasp, and scholars have employed many different ways of defining it (Egels, 2005; Joyner & Payne, 2002). Lewis (1985, p. 382) approximated a broad definition for business ethics stating that this topic covers *"moral rules, standards, codes, or principles which provide guidelines for right and truthful behavior in specific situations."* For the purpose of this thesis, we use it as an umbrella term that spans various categories that came up in the articles we analyzed. These include stakeholder management (Bingham, Gibb Dyer, Smith, & Adams, 2011; Cennamo, Berrone, Cruz, & Gomez-Mejia, 2012; Mitchell et al., 2011), sustainable development (Delmas & Gergaud, 2014), corporate social responsibility (CSR) (Campopiano & De Massis, 2015; Déniz & Suárez, 2005; El Ghoul et al., 2016) and corporate social performance (CSP) (Dyer & Whetten, 2006; Kim et al., 2020; Labelle, Hafsi, Francoeur, & Ben Amar, 2015) for example. In general, we view such situations as ethical issues and problems where a violation of ethical principles or values like integrity, honesty, or fairness is present or could arise, resulting in immoral actions (Fernando, 2010; Jacobs, 2004). Ethical dilemmas are situations where a moral question comes up that decoys family firms in a tradeoff regarding what they should do. They are frequently torn between a financially and an ethically or socially intriguing option here, and there are often no specific legal regulations in place to shape their behavior (Hartman & Desjardins, 2006). We do not utilize a specific philosophical ethics perspective or moral guideline like Utilitarianism or Deontology in this thesis to evaluate our findings.

#### 3.1.3. SEW

Finally, we want to define socioemotional wealth because this concept will come up multiple times during our later analysis and is of great importance there. Something unique about family firms is that, in parallel to striving for financial wealth, they also have the non-financial goal of maximizing their SEW (Chua, Chrisman, & De Massis, 2015; Zellweger, Kellermanns, Chrisman, & Chua, 2012). The relationship between family involvement and the adoption of such non-economic goals as SEW preservation is mediated by family influence (Chrisman, Chua, Pearson, & Barnett, 2012). SEW is a broad concept that has many factettes. It was first classified and introduced by Gómez-Mejía et al. (2007) as an extension of the behavioral agency model. According to them, family firms often use SEW as a reference point to decide

which actions to undertake. They describe it as *"non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty. Using a socioemotional reference point, family firms are likely to prioritize maintaining family control even if this means accepting an increased risk of poor firm performance. Yet, because they must keep the firm from failing, they may also act more conservatively by avoiding business decisions that may increase performance variability"* (Gómez-Mejía et al., 2007, p. 106). SEW was further defined by Berrone, Cruz, and Gomez-Mejia (2012) who introduced their FIBER scale to grasp its different dimensions. F stands for „*Family control and influence*", I means „*Family members' identification with the firm*", B stands for „*Binding social ties*", E is short for „*Emotional attachment*", and R means „*Renewal of family bonds through dynastic succession*" (Berrone et al., 2012, pp. 262-264). In recent years, scholars like Cruz et al. (2014) have started to acknowledge that SEW preservation can also translate to adverse outcomes; it, therefore, has a dark side to it as well. This becomes evident when the demands of different SEW dimensions are in conflict with each other and family firms have to prioritize one. They will then act responsible with regard to that dimension and irresponsible with regard to the other one at the same time.

### 3.2. Descriptive Results

An analysis of the 110 articles we derived our results from showed that the topic of family firm ethics is predominantly investigated with a quantitative approach, mainly using cross-sectional data, but 37% of the quantitative studies also used longitudinal data. Thirty-three percent of the articles we chose to work with are purely conceptual. Further details on the methodologies that the studies relied on can be found in Table 2 in the Appendix.

The number of papers that were relevant to our topic has drastically increased over the past years. Before 2000, only two articles were published that we could use, while only in the roughly three years from 2019 until 2022, 38 of the 110 articles we analyzed were published. As Table 3 in the Appendix shows, the research area of family business ethics seems to have gained importance and momentum only since the early 2000s.

Most of the studies we investigated were published in the Journal of Business Ethics (33%), followed by the journals Family Business Review (19%) and Entrepreneurship Theory and Practice (15%). The other articles were typically derived from journals that only included one or two relevant articles for our analysis. We have provided an overview of the journals that published our articles in Table 4 in the Appendix.

We have also determined upon which theories the articles we analyzed were built. Most of them covered or focused on agency (18%) and stewardship theory (13%) to varying degrees, which signals the ongoing discussion among scholars about which theory is appropriate to investigate family firms in the academic literature. Next to those theories, stakeholder theory is frequently employed; it was used in 8% of the articles we investigated. Apparently, these theories lay much of the groundwork for studying family firm ethics. The remainder of the articles shows much heterogeneity when it comes to utilized theories, and while, for example, identity theories were also used by multiple articles, most of them relied on theories that no other article used. However, 31% of the articles were not based on any particular theory. This proportion is relatively high because we had to include many articles in that count which focus on topics like CSR or SEW or include them as a perspective without providing readers with more concrete specifications or theories of those. We graphically depicted details on the statistics regarding which theories the articles we studied used in Table 5 in the Appendix.

We also examined which geographic regions the 110 papers focused on. It became evident that predominantly single countries in Western economies were studied as 26% of the studies we analyzed relied on samples from Northern America and 16% on samples from Europe. The data from only 8% of them were collected in Asia. Additionally, 12% of all studies accounted for multiple countries in their sampling procedures. We have summarized more insights on the country contexts in which family firms were explored in Table 6 in the Appendix.

Finally, due to the heterogeneity present there, it did not make sense to visualize the various definitions that the studies used to define family firms in a table, but we still want to elaborate on our findings in that regard. Thirty-six studies did not clearly state how they defined the term "family firm," which is somewhat concerning and in line with the characteristics of the papers that Vazquez (2018) investigated for his systematic review. Apart from that, many studies employ their own definitions that they often derived, at least in parts, from other studies. Nevertheless, there seems to be a consensus among many scholars that Chua, Chrisman, and Sharma (1999) found an appropriate way to define family firms since 15% of the articles we studied used their definition. This definition captures, just like the one formulated by Astrachan and Shanker (2003), that some kind of intention must be present to get different generations of the owning family involved in the business, for example, through transgenerational succession. Additionally, the definition by Chua et al. (1999) states that not only family involvement in a business but also pursuing a family vision makes a firm a family firm.

### 3.3. Ethical Problems

While Adams, Taschian, and Shore (1996) found no difference in the ethical dilemmas faced by family and nonfamily firms, we argue that there are unique ethical problems to be found in family firms next to the ones that all types of firms face. These typically arise due to the unique interplay between the family, the business, and the ownership system and tradeoffs between economic or financial and SEW considerations inherent to family firms. However, an ethical dilemma can also arise when a tradeoff between internal and external SEW considerations exists (Vardaman & Gondo, 2014). As implied in Vazquez's (2018) article, we have categorized ethical problems in family firms according
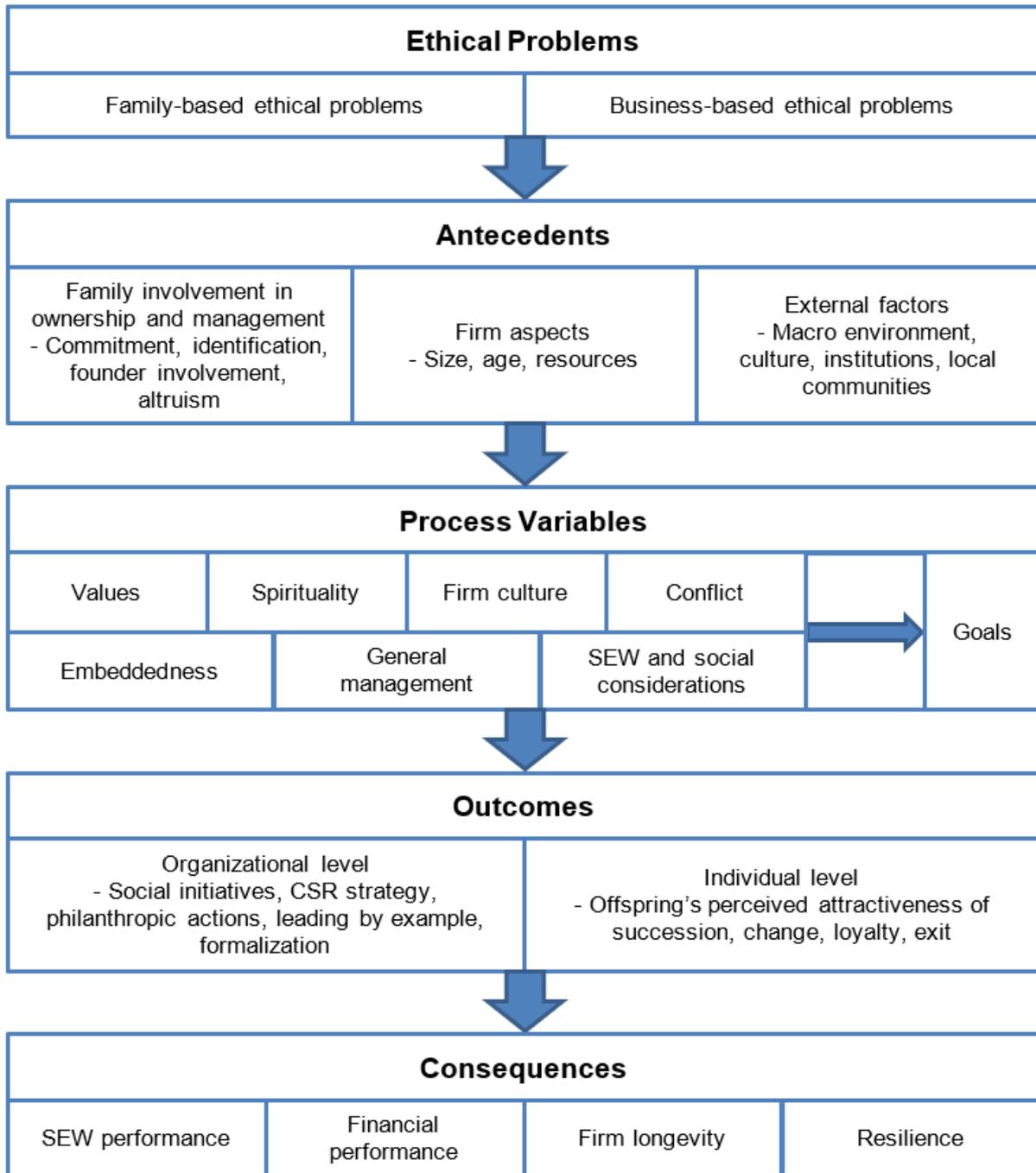
**Figure 1:** Ethical Problems in Family Firms and Antecedents and Outcomes of Solving them.

Source: Own illustration.

to their origin as either family-based or business-based. This broad separation was then supplemented by introducing further subcategories containing specific problems and dilemmas. There is hardly any extant literature on processes employed by family firms to mitigate ethical problems; however, some defining aspects of those like their antecedents and outcomes could be identified. We connected and synthesized the findings of this structured review in the framework shown as Figure 1, which depicts the connections between ethical issues and the antecedents and outcomes of processes that family firms employ to deal with them that have been established in the literature. In the following section, we will turn towards explaining these and their detailed effects, which must not always be positive. These building blocks are highly intertwined and jointly come into play at different times after moral questions arise in a family firm. Interestingly, some-

times the antecedents of ethical behavior in family firms are what problems result from, and occasionally ethical problems can be turned from challenges into opportunities through appropriate management.

### 3.3.1. Family-Based Ethical Problems in Family Firms

*Succession-Related Dilemmas*

The first kind of ethical problems arising from the owning family is succession-related dilemmas. They compose one of the biggest groups of ethical problems in family firms and are manifold. One of those problems that is also among the most frequently occurring ethical problems in family firms is that the succession process gets delayed (Gallo, 1998). It is oftentimes difficult for predecessors to let go of their power when the time to do so has come since they want to retain their status, which can be detrimental to firm performance and the motivation of successors. Delaying the succession process can put the further existence of the company at risk through several levers since the business bears its expenses (Gallo, 1998; Schulze, Lubatkin, & Dino, 2002).

Another major ethical problem that predecessors can face is that when they want to pass the family firm on to the next generation, the children whom they want to become their successors are not willing to accept that position (McMullen & Warnick, 2015). The children's commitment levels might be low, leaving their parents in a difficult situation where they have to find appropriate actions to reach their goal of finding a family successor without forcing their children (Bloemen-Bekx, Van Gils, Lambrechts, & Sharma, 2021). This situation can trap parents in various ethical dilemmas depending on what alternative successors are available next to the non-committed child. They will typically prefer a committed child who is not very capable of leading the family firm over a hardly committed one that is very capable, but this preference changes as the firm grows in size; in general, family successors are preferred over outsiders who might be committed and capable (Richards, Kammerlander, & Zellweger, 2019).

The treatment of their children and the altruism levels displayed towards them can become a relatively big ethical problem for parents from business families. When the children's education lets some children feel like they are ingroup and others feel like they are outgroup members, the latter kind is likely to engage in deviant behavior at their workplace in the family firm, for example, because those children believe that they were treated unfairly and have developed feelings of entitlement (Eddleston & Kidwell, 2012).

One dangerous parenting style is also "grooming" children too much. This is somewhat authoritarian and goes in the direction of emotional manipulation, which is an ethical problem. Grooming prepares children for having a role in the family business one day without leaving room for the children to decide whether they even want to accept that role leaving them in a challenging situation where they have to decide between pursuing their own goals and pleasing their parents (McMullen & Warnick, 2015).

The existence of another succession-related problem became evident in the work of Akhmedova, Cavallotti, Marimon, and Campopiano (2020) who investigated the role of female family members, precisely daughters, in family firms. They often face higher barriers to success than their male pendants and are underrepresented in the top management teams of many family firms. Such barriers can be external or internal. They include but are not limited to business sector masculinity, primogeniture, role incongruity, low family support levels, and non-family stakeholders questioning daughters' legitimacy.

*Reputational Concerns*

Family reputation is a SEW dimension, but it has earned so much prominence as a topic in family business literature that considerations around it can be classified as their own type of ethical issue. It is astonishing what lengths family firms will go to protect their reputation, potentially even hurting some stakeholders (Kim et al., 2020; Martin, Campbell, & Gomez-Mejia, 2016; Vardaman & Gondo, 2014). It can therefore become an ethical problem, and different dilemmas arise from it, like the one to decide whether a connection between the family name and the firm name should even be established since this will enhance reputational concerns (Kashmiri & Mahajan, 2014).

*Extraction of Personal Gains*

Another major ethical problem in family firms is that the owning family might expropriate their firm and take personal gains and benefits away from it (El Ghoul et al., 2016; Gallo, 2004). Deciding whether and to what degree that should be done is yet another ethical dilemma because while it enriches the family, it can severely harm the family firm (Breuer & Knetsch, 2022). Further insights into this issue are provided in the section about agency problems.

*Family Spirituality Issues*

Determining to what degree the owning family's religion should influence their business can prove to be a real ethical dilemma (Barbera, Shi, Agarwal, & Edwards, 2020). While it may yield significant benefits for the family firm, it can also introduce ethical problems like the discrimination against stakeholders who belong to a different religion; and sometimes religious values can negatively interfere with business expansion, product pricing or get in the way of family firms pursuing promising business opportunities because they come with increased risk levels (Fathallah, Sidani, & Khalil, 2020). Like tradition, religiosity and a business family's religious identity can conflict with and hold back strategic renewal, which is necessary to ensure a family firm's longevity, as Abdelgawad and Zahra (2020) found out. Therefore, spiritual capital in family firms is a double-edged

sword. Religious identity can be a resource to family firms since it aligns the family and can manage conflicts, but it might potentially also become a burden by limiting openness towards and adoption of innovation.

*Heritage- and Tradition-Related Disputes*

While tradition is often highly valued and prescribed many positive effects in family firms, it can also become the root cause of an ethical problem. Family firms might be so inclined to stick to tradition that their innovation processes become far less dynamic than those of non-family firms (Duh, Belak, & Milfelner, 2010). They can experience being truly torn between sticking to their tradition and keeping their business model up-to-date (Brinkerink, Rondi, Benedetti, & Arzubiaga, 2020). This might even go so far that old and influential business families use their power to interfere with politics in order to protect themselves and their companies from innovative trends (Morck & Yeung, 2003).

Similarly, also family heritage does not only have positive factettes. Instead, it can impose ethical problems on successors that are unique to family firms. In this regard, Kidwell, Eddleston, and Kellermanns (2018) have examined the topic of negative imprinting through which the owning family can basically become a continuous burden to all other stakeholders of their family firm. It may lead successors to adopt particular ways of viewing the family firm and its relationship with it, encouraging them to copy and continue to employ unethical business practices from their predecessors. When a very high sense of entitlement, injustice or parental altruism is imprinted, for example, human resource (HR) practices in family firms will be less formalized and fair, and therefore they will probably be manipulated (Kidwell et al., 2018). However, when preceding generations built the firm utilizing unethical means or techniques, and their successors recognize and acknowledge this, they will be left with the dilemma of finding the right way to deal with that (Adams et al., 1996). Such inherited ethical dilemmas can arise based on one's parents' actions and based on those of earlier generations. (Litz & Turner, 2013). People tend to look up to those people and share their values. Therefore, it can be really challenging for successors to find appropriate ways to deal with it when they uncover previous generations' actions of unethical business conduct, and further problems can arise when successors just copy those actions and continue to employ them. Family ties are also likely to hinder whistleblowing in family firms (Litz & Turner, 2013). However, when successors realize and accept that their ancestors behaved in unethical ways, they can feel vicarious guilt which induces vicarious responsibility, and they might take responsibility for those behaviors even though they were not the ones showing them (Bernhard & Labaki, 2021).

*Family CEO Complications*

When a company's CEO features negative personality traits, this can become detrimental to all of its stakehold-

ers and to that company's success (Zona, Minoja, & Coda, 2013). Chandler, Petrenko, Hill, and Hayes (2021) have investigated how the harmful effects of a CEO showing the dark triad trait Machiavellianism are enhanced in a family firm setting. Machiavellian CEOs will form more strategic alliances with partners to enlarge their pool of targets to control and manipulate, but therefore, these alliances will be less sustainable. However, family involvement can signal the firm's partners that someone responsible (the family) is ready to intervene when partnerships become unethical. That is why those partners are more likely to form such alliances and keep them for longer when an owning family is present (Chandler et al., 2021). This raises the moral question of whether family firms (or their owning families) have a responsibility to protect partners trusting a business because of the family involvement from being exploited by its Machiavellian CEO.

*Systems Conflict Between Family and Business*

As we have already shown, family involvement in family firms comes with some downsides; it can, for example, also become dysfunctional when it magnifies the intensity of conflicts between family members (Sharma & Sharma, 2011). However, there is still another type of conflict that can introduce ethical dilemma situations in family firms. When the family and the business system require different actions in the face of challenges or opportunities, it will be difficult for family firms to determine which system's demands they should follow (Shepherd & Haynie, 2009). They often have to decide whether they want to prioritize SEW or exclusively economic concerns (Lamb & Butler, 2018). Interestingly, they are, however, often inclined to choose the, in a business sense, riskier option in order to secure and increase their SEW (Gómez-Mejía et al., 2007; Shepherd & Haynie, 2009). This may sometimes become very dangerous to them from an economic point of view when financial considerations get neglected to a great extent. This can, for example, happen when family firms have to decide whether they want to retain family control or economic security (Gómez-Mejía et al., 2007).

### 3.3.2. Business-Based Ethical Problems in Family Firms

*Social Responsibilities*

Since the 1980s, at the latest, it has become clear that not only governments and public institutions are responsible for solving the grand challenges faced by humanity like climate change, hunger, and most recently, the pandemic. Corporations also need to take action in that regard, and in recent years it has become evident that even small- and medium-sized enterprises, which are often family firms, are not excluded from that responsibility (Randerson, 2022; Van Gils et al., 2014). They have a social function and must take care of the common good beyond the mere maximization of their own profits (Gallo, 2004). This is the essence of

the CSR concept, and sometimes CSR activities are seen as signs of ethical behavior (Van Gils et al., 2014). An ethical problem here is that many scholars find family firms' social and CSR performance to be worse than that of non-family firms (Cruz et al., 2014; Cuadrado-Ballesteros et al., 2017; El Ghoul et al., 2016). Family firms are tasked with solving the ethical dilemma of finding the proper measures to contribute to solving social issues or at least reducing their adverse consequences (Labelle et al., 2015; Niehm, Swinney, & Miller, 2008). They must find a balance between leading the firm to economic (financial) prosperity that can be sustained in the future ("doing well") and helping others, for example, through displaying altruistic and philanthropic behavior ("doing good") (Bingham et al., 2011; Campopiano, De Massis, & Chirico, 2014; Dekker & Hasso, 2016). They have what Randerson (2022) conceptualized as "Family Business Social Responsibility" (FBSR). Family firms are closely connected to society and responsible for any harm they cause to society; they must be held responsible for the social costs they create and have to focus on all stakeholders and not exclusively on shareholders when making decisions (Van Gils et al., 2014). However, it is commonly believed that family firms are predominantly used to maximize the utility of the owning family (Gallo, 2004). Examples of tradeoffs emerging in the field of social responsibility are environmental-focused (Dou, Su, & Wang, 2019), product-related (Delmas & Gergaud, 2014; Kashmiri & Mahajan, 2014) or employee-focused (Kim et al., 2020) ethical behaviors where family firms have to determine whether they want to invest into going beyond the standards required by law. In family firms, it can be challenging to manage the salience of various stakeholders fairly and transparently (Signori & Fassin, 2021). Additionally, it can be an ethically challenging situation for family firms to decide what they want to disclose in their CSR reports (Campopiano & De Massis, 2015).

*Organizational Justice Difficulties*

Retaining organizational justice and keeping the fairness perceptions of stakeholders at high levels can prove difficult in family firms. One repeatedly occurring ethical problem related to this is loyalty buying which frequently lays the groundwork for organizational building in those companies (Gallo, 1998). Further reasons for justice difficulties are the negative sides of altruism, agency problems, and little formalization in HR management (Barnett & Kellermanns, 2006).

The most frequently hurt fairness perceptions are probably those of non-family employees. It is an ethical challenge for family firms to foster justice (potentially regarding HR processes) between family and non-family employees and enhance their fairness perceptions. These can, for example, be challenged when employees are rewarded for contributing to SEW rather than economic wealth, which others do not recognize and therefore consider these rewards to be unfair (Samara & Paul, 2019).

Possibly the central ethical problem introducing organi-

zational justice difficulties is nepotism, the hiring of family members (Déniz & Suárez, 2005). Family firms frequently employ it and thereby discriminate against non-family members (Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013). Nepotism is sometimes based exclusively on people's family member status without their competency being taken into account. The intensity of employed nepotism in family firms depends on which SEW dimensions family firms focus on. When family control and dynastic succession are prioritized, high levels of nepotism result from that, which are lower when family firms focus on family identification (Firfiray, Cruz, Neacsu, & Gomez-Mejia, 2018). Nepotism can become a true dilemma for family firms because they may sometimes be trapped in a tradeoff between the family and SEW goal to help a family member and the business goal to hire the best people possible (Adams et al., 1996; Karra, Tracey, & Phillips, 2006) or between the goals resulting from different SEW dimensions (Firfiray et al., 2018). High perceived nepotism will also scare away qualified new applicants (Burhan, van Leeuwen, & Scheepers, 2020). The hiring of family members will foster procedural and distributive unfairness perceptions of non-family employees because they always view it as nepotism regardless of the hired family member's competencies and perceive it to be even more unfair than cronyism (Burhan et al., 2020). Especially when it comes to intrafamily succession, this will typically be viewed as unfair by non-family employees (Barnett, Long, & Marler, 2012). However, nepotism can sometimes also be something positive. When it is reciprocal and occurs within a generalized exchange system rather than being based on entitlement and occurring in a restricted one, nepotism can be used to manage tacit knowledge and thereby become a competitive advantage (Jaskiewicz et al., 2013). We must also mention that nepotism will not be viewed as a problem in some cultures, especially in those from the Eastern world shaped by a Confucian rather than Aristotelean view of ethics. It can be highly regarded and expected there because people feel a strong moral duty to help out their families, which everyone understands (Sison, Ferrero, & Redín, 2020).

Unfairness perceptions of employees are further enhanced by the existence of a bifurcation bias regarding compensation in family firms where family and non-family employees receive different treatments. Family firms might strongly desire to give family employees more compensation than non-family employees in collectivist cultures (Samara, Jamali, & Parada, 2021). However, this bias must not always disadvantage non-family employees; sometimes also, family employees are the group receiving lower compensation levels (Waterwall & Alipour, 2021), especially in individualist cultures (Samara et al., 2021).

*Agency Problems*

Agency issues are a source of ethical problems that trouble many family firms. Classical agency theory suggests that agency problems arise when ownership and control are separated and given to principals and agents. This pro-

vides agents with an incentive and the possibility to display opportunistic behavior driving up agency costs. In theory, such problems should not exist in family firms since ownership and control jointly lay in the hands of the controlling family there (Dyer, 2006; Fama & Jensen, 1983; Jensen & Meckling, 1976). However, various scholars have shown that, especially when a restricted exchange system prevails (Long & Mathews, 2011), distinct types of agency issues arise in family firms (Schulze et al., 2002; Schulze, Lubatkin, Dino, & Buchholtz, 2001). These can potentially even be considered more severe in harming stakeholder value than those in non-family firms (Lubatkin et al., 2005; Madison et al., 2017; Morck & Yeung, 2003; Purkayastha, Veliyath, & George, 2019). A dangerous effect interfering with that is that ties between family members loosen as family firms grow and age which induces changes in the exchange system, making it likely that a generalized exchange system will turn into a restricted one. Divorce or the death of a prominent family member can have similar consequences (Long & Mathews, 2011). Also, Karra et al. (2006) found that the severity of agency problems grows with the firm size. In family firms, the risk that individuals will misuse their power is omnipresent since the ownership and management responsibility lay in the hands of the same family, or that family at least determines who manages the firm (Gallo, 1998). Only because kinship exists in family firms rational or ethical behavior cannot be assumed to always be apparent (Chrisman, Chua, Kellermanns, & Chang, 2007). Agency conflicts in family firms can potentially occur between firm owners and managers (principal and owner) or majority and minority shareholders (principal and principal) (Krishnan & Peytcheva, 2019; Martin et al., 2016; Purkayastha et al., 2019). However, also classical principal-agent problems exist there (Chrisman, Chua, & Litz, 2004). Even a non-family manager might act primarily in favor of the owning family and thereby disregard the needs of other stakeholders as principals (Morck & Yeung, 2003). Agency conflicts in family firms include moral hazard behaviors like shirking or freeriding, holdup problems, and adverse selection when recruitment happens based on ethnicity and kinship rather than competence (Karra et al., 2006; Schulze et al., 2002).

Many agency issues in family firms result from low levels of self-control displayed by their owner-managers; self-control levels are also a determining factor for whether a sibling partnership can become a cousin consortium which is in some regards the better organizational structure for a family firm (Lubatkin et al., 2005).

One major ethical issue that can also result from self-control problems is asymmetric altruism which emerges from a lack of transparency and behavior controlling mechanisms in family firms (Chrisman et al., 2007; Dyer, 2006; Long & Mathews, 2011). Altruism can be beneficial to a family firm, especially when it is still in an early stage (Karra et al., 2006) but it might just as well endanger that same firm. It can foster strategic inertia and make the ratio between family consumption and business investment of financial resources become too high (Schulze et al., 2002). A significant ethical prob-

lem that can occur in family firms as a result of preferential treatment is the so-called Fredo effect which was further explored by Kidwell, Kellermanns, and Eddleston (2012). It arises when family successors start to show little discipline and opportunistic and unethical behaviors. They become less competent impediments than others and only have their job because they are part of the owning family. They become an actual burden to the family firm and leave other employees and family members with the ethical dilemma of finding an appropriate way to deal with them.

*Disputes in Routine Business Operations*

Family firms might, for various reasons, be intrigued to and frequently do display corporate misconduct (Randerson, 2022). They are often not publicly traded and need to disclose less information. Therefore, information asymmetries will arise between family and non-family stakeholders, which can lead to opportunistic manager behavior that will manifest in unethical business practices like earnings management (Randerson, 2022). CFOs in family firms are especially intrigued to misreport financials when they have a good relationship with the CEO (Gao, Masli, Suh, & Xu, 2021). Consistent with those findings, external auditors believe the risk of fraud in family firms is relatively high, which is an ethical problem (Krishnan & Peytcheva, 2019).

Family firms sometimes also utilize corruption for their own benefit (Dyer & Whetten, 2006). However, in this regard, it is important to mention that whether this will be the case can depend heavily on the environment surrounding them. In some cultures, firms may be expected to pay bribes and could not conduct their daily business operations without doing so. When that is the case, they will face an ethical dilemma based on the tradeoff between positive economic returns they receive from bribing and its negative implications for SEW (Ding, Qu, & Wu, 2016). When family firms want to behave in an ethical manner and avoid corruption here, this can turn into a competitive disadvantage (Dela Rama, 2012). Similarly, gift-giving might be highly regarded in some cultures, while this is not the case in others, and family firms must find appropriate ways to deal with this problematic situation (Sison et al., 2020).

Strategic planning is another topic that frequently introduces ethical problems in family firms since many of them tend to avoid it, which unnecessarily limits their capabilities and weakens the organization (Gallo, 1998). This is closely intertwined with the succession-related dilemma that the succession process gets delayed because leaders who greatly execute their strategy will rather not lose their legitimacy, even if that strategy is rather simple (Gallo, 1998).

*Low Professionalization and Formalization degree*

The last ethical problem present in family firms is that they often lack professionalization (Déniz & Suárez, 2005) and formalization (Cuadrado-Ballesteros et al., 2017). This is, for example, the case with regard to written codes of

ethics, so it may sometimes be complex for employees to know what behavior the firm expects from them when moral questions arise (Adams et al., 1996). Also, family firms often lack formalized governance mechanisms to deal with the agency problems they face (Schulze et al., 2002).

## 3.4. Solving Ethical Problems
### 3.4.1. Antecedents

*Firm Characteristics and External Factors*

To begin with, it is essential to acknowledge that there is much heterogeneity among family firms as they differ in their country of origin with its culture but also in factors like firm size and age and whether the firm is publicly traded which can influence their ethical behavior (Ding & Wu, 2014; Dou, Zhang, & Su, 2014; Gao et al., 2021; Niehm et al., 2008; Richards et al., 2019). Even nepotism can also lead to good economic performance, given that the market and legal environment surrounding a firm that employs it are weak (Firfiray et al., 2018). Also, past performance, profitability (Cruz et al., 2014; Dou et al., 2014) and resources of various kinds like financial or material ones are determining factors for how much of an ethical strategy a family firm can implement (Cabrera-Suárez, Déniz-Déniz, & Martín-Santana, 2014; Dekker & Hasso, 2016; Sharma & Sharma, 2011).

Next to many rather internally oriented antecedents we will introduce in the following, also, some external factors play an important role in shaping a family firm's responses to ethical problems. Their actions can, for example, be guided by institutional and local community pressures (Campopiano & De Massis, 2015; Ding et al., 2016; Sharma & Sharma, 2011) where family involvement further defines what family firms' responses to such pressures look like (Campopiano & De Massis, 2015). Also, the macro-environment surrounding them (El Ghoul et al., 2016) and power distance define family firms' actions where more power distance leads to morally worse behavior (Breuer & Knetsch, 2022). The degree of power distance present within a country's culture additionally determines how severe the negative consequences of the bifurcation bias in family and non-family employee compensation will be. When power distance is low, non-family employees will reduce their inputs more drastically, which holds true for family employees when it is high (Samara et al., 2021).

*Family Involvement*

Family involvement itself is arguably the most important antecedent of ethical behavior in family firms as it influences and defines many of the other aspects and steps these firms follow in dealing with ethical issues (Van Gils et al., 2014; Vazquez, 2018) for example through its influence on the firm's social capital. Social capital can be defined *"as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit"* (Nahapiet & Ghoshal, 1998, p. 243). Family involvement does not only include the aspect of family ownership but also the family's role in firm management (Van Gils et al., 2014). It remains unclear, and the literature presents mixed findings regarding what the pure influence of family involvement on ethical issues is (O'Boyle, Rutherford, & Pollack, 2010). As seen previously within some dilemmas, it can be their root cause; however, some scholars, like Sharma and Sharma (2011), argue that it positively affects a family firm's ethical behavior. Madison et al. (2017) proved that a family firm's stewardship levels increase with the number of family members and family generations working there, and according to Dou et al. (2014) and Campopiano et al. (2014), a positive relationship exists between family involvement (which they define as ownership and duration of control rather than management) and philanthropic orientation or charitable giving.

However, it is also clear that too high levels of family involvement can become problematic, for example, because they increase the inherent and control risk of audits (Krishnan & Peytcheva, 2019) and Hsueh (2018), El Ghoul et al. (2016) and Cruz et al. (2014) explored that family ownership harms CSR. With increased family involvement in management, much potential for conflict arises, and stewardship behavior goes down as the involved family members might expropriate benefits for the family (Campopiano et al., 2014). Regarding HR practices, a moderate level of family involvement introduces the highest justice perceptions among non-family employees (Barnett & Kellermanns, 2006). According to Jiang, Cai, Nofsinger, and Zheng (2020), family involvement in the firm's chair improves a family firm's earnings quality and lowers the future stock price crash risk. In general, family involvement is a determining element for many of the following antecedents to solving ethical problems. There are also a few other factors like commitment (Azizi et al., 2022), identification (Bloemen-Bekx et al., 2021), relationships and dynamics (Sharma & Sharma, 2011), family CEOs (Berrone et al., 2010; Hsueh, 2018), family vision (Barnett et al., 2012), founder involvement (Dick et al., 2021) and imprinting (Kidwell et al., 2018) which are closely related to or potentially even covered within the concept of family involvement.

*Commitment*

Family members can feel various levels of commitment to the family and the family firm, which heavily affects their behavior in the face of an ethical problem (Azizi et al., 2022; Dou et al., 2019; Litz & Turner, 2013). Commitment also introduces a long-term focus to the firm (Dou et al., 2019) and affective commitment of family and non-family employees is very beneficial to family firms (Mahto, Vora, McDowell, & Khanin, 2020; McMullen & Warnick, 2015; Waterwall & Alipour, 2021) for example because it lowers employees' turnover intentions (Mahto et al., 2020) and increases the likelihood that children will pursue a career in the family firm (McMullen & Warnick, 2015). Affective commitment in family successors will be enhanced when their parents

nurture them, which means that they aim to fulfill their children's needs for competence, autonomy, and relatedness (McMullen & Warnick, 2015). When children who are potential successors feel little commitment and are unwilling to take over the family business, this reduces their predecessors' philanthropical (Dou et al., 2014) and social actions (Delmas & Gergaud, 2014). It will also make these children less attractive as successors compared to a lower-skilled but committed candidate, but this preference can change as the firm grows and more family members get involved (Richards et al., 2019). Still, predecessors should not force unwilling children to work in the family business (McMullen & Warnick, 2015). To explain intrafamily succession in family firms, Janjuha-Jivraj and Spence (2009) developed the concept of bounded intergenerational reciprocity. It focuses on reciprocity within the same kinship group (the family is the bounded group here), where non-participation in the reciprocal exchange can lead to exclusion from social benefits. There is little direct reciprocal exchange, and gratification happens instead deferred.

*Family Identification*

Family identification with the firm is a predictor of a firm's focus on non-family stakeholders, and there is a positive relationship between both (Déniz-Déniz, Cabrera-Suárez, & Martín-Santana, 2020). Family identification of family members also influences their levels of accepted vicarious guilt, and guilt increases the morality of business practices (Bernhard & Labaki, 2021). Also, the organizational identity of family firms is an essential factor as, among other things, it determines whether they frame disruptive innovation as a threat or opportunity and the subsequent steps they undertake (Brinkerink et al., 2020).

*Altruism*

Next to its negative consequences like weakening governance mechanisms and making children self-centered (Lubatkin, Durand, & Ling, 2007), altruism toward the family can also reduce agency costs in family firms by increasing firm flexibility and reducing risk when it is reciprocal and systematic. Then a "quasi-family" can be formed where the familial ties of the owner family expand to non-family employees (Karra et al., 2006). Parental altruism also moderates the relationship between family ownership and risk-taking; higher parental altruism levels introduce more risk-seeking behavior, while the opposite holds true for psychological altruism (Lim, Lubatkin, & Wiseman, 2010). When paired with high levels of self-control, parental altruism can reduce agency issues and enhance procedural justice perceptions of family and non-family employees (Lubatkin, Ling, & Schulze, 2007).

*Founder Control*

Founder control can positively affect family firms' ethical

behavior as it lowers their likelihood of conducting earnings management (Martin et al., 2016) and reduces CSR weaknesses (Lamb & Butler, 2018). However, founder control also lowers a family firm's CSR engagement levels except for when founders suffer from overconfidence bias and do not view CSR as a risk to their controlling influence (Dick et al., 2021).

*Exchange System*

As suggested by multiple scholars, the prevailing exchange system also influences how family firms will confront ethical problems. It lets an ethical frame evolve because reciprocity can enhance family cohesion (Long & Mathews, 2011). Family firms are typically positioned on a continuum between a restricted and generalized exchange system. In a restricted one, interactions will be quite contractual and short-term focused because direct reciprocity is always expected, while generalized ones introduce a more long-term focus and they attribute value to the relationship between exchange partners per se (Long & Mathews, 2011). As also done by Long and Mathews (2011), the Golden Rule is often used to explain reciprocity, and it is an important concept for family firms (Barbera et al., 2020): there are various rational actors (family members) who connect morally by receiving and because of that returning favorable treatment. A generalized exchange system also strengthens the organization's procedural justice climate and the justice perceptions of non-family managers so that they will support intrafamily succession (Barnett et al., 2012). Increased justice perceptions introduce higher levels of family firm attractiveness for employees, which reduce their turnover intentions (Waterwall & Alipour, 2021) and allow family firms to capture the positive effects of nepotism (Firfiray et al., 2018).

*Imprinting*

Imprinting can influence the ethical behavior of family firms positively or negatively. However, re-imprinting is luckily possible when its influence was rather negative because previous generations displayed unethical behavior. To achieve it, family members of the successor generation must be ready to critically evaluate what they learned and start forming new "good habits" (Kidwell et al., 2018).

Based on these early antecedents, we could identify some further ones that will evolve from them and are known variables in the processes that family firms employ to solve ethical problems.

*Values*

One of those, which is to some degree induced by family influence among other factors, is the range of a family firm's values (Duh et al., 2010) which are derived from the business, the family, and the local community setting (Signori & Fassin, 2021). Social interactions within and outside the family are the key to generating family firm values (Salvato

& Melin, 2008) which arise from a combination of emotions and rationality and connect family firms' stakeholders (Koiranen, 2002). Depending on their nature, they can either have a positive or negative effect on solving ethical problems. In general, much backup for their positive influence is found in the literature (Salvato & Melin, 2008). Duh et al. (2010) found out that family firms find dignity fundamental and that they have a positive attitude towards core values with ethical content; the prominence of such values has increased significantly over the past years (Blodgett et al., 2011). They also embrace hard work, honesty, and credibility, which provides them with a moral in addition to the existing legal guideline for their actions (Barbera et al., 2020; Koiranen, 2002).

In contrast to what the ethical problems around general management practices might lead one to believe, family firms also show much respect for the law (Duh et al., 2010). Values around tradition and innovativeness are important to family firms on similarly high levels, so family firms are likely to face some tradeoffs when these two speak against each other (Aragón-Amonarriz, Arredondo, & Iturrioz-Landart, 2019; Koiranen, 2002). A family firm's values can be seen as predictors for which SEW dimensions it will strive to improve (Ruf, Graffius, Wolff, Moog, & Felden, 2021). Finally, it is not only important for family firms to have proper values in place in the current generation; value congruence with past and future ones also needs to be established (O'Boyle et al., 2010), for example, because it can enhance commitment (Mahto et al., 2020). Values must additionally be communicated clearly to all stakeholders, including broader society (Gallo, 2004) through "dynamic firm capability" (Salvato & Melin, 2008). Business families should search for cohesion between the values they want to promote in their firms and the ones they live by as a family (Marques, Presas, & Simon, 2014) and higher levels of value commitment and trust also let employees perceive their leaders to act as stewards (Davis, Allen, & Hayes, 2010).

### Spirituality

When examining the origin of family firm values more precisely, we found that a family firm's spirituality and religiosity can play a significant role in shaping them (Astrachan, Binz Astrachan, Campopiano, & Baù, 2020). Spiritual leadership can increase employees' organizational commitment, but this effect is more substantial for family employees (Tabor, Madison, Marler, & Kellermanns, 2020). When the family behind a family firm is religious, religion becomes an important antecedent for its ethical behavior (Astrachan et al., 2020; Pieper, Williams Jr, Manley, & Matthews, 2020) as it might induce charitable giving, for example (Barbera et al., 2020) and faith can foster the emergence of stewardship behaviors (Carradus, Zozimo, & Discua Cruz, 2020). Intergenerational solidarity gets established and induces the adoption of values-based leadership (Barbera et al., 2020). Religion is not equally important in all family firms, but it can sometimes be transcending and become so important that it is the sole determinant of behavior (Fathallah et al., 2020). Different

types of religious identity within family firms are introduced by their religious values and create distinct forms of spiritual capital. The one evolving from an insular religious identity will only allow family firms to close agreements with likeminded people lowering their possibility of realizing drastic changes. With a more pluralistic religious identity, religious guidelines are adhered to with more interpretative freedom where opportunities for drastic strategic renewal can be explored (Abdelgawad & Zahra, 2020). Some differences can also be observed based on which religion a family belongs to. While Muslim firms tend to strictly adhere to their religion's code of conduct in order to avoid being punished by God, Christian ones instead view their religion's moral principles as guidelines, including some interpretative freedom (Fathallah et al., 2020).

### Culture

Another defining aspect of how family firms deal with ethical problems is their culture (Duh et al., 2010). Because of their often present clan culture, family firms typically embrace ethics of care (Long & Mathews, 2011). A caring culture enables family firms to align their vision, mission, and values (Duh et al., 2010). In addition to that, family firms are often characterized by a place-based culture which is why they are willing to contribute to the well-being of their communities (Kim et al., 2020). There are high levels of cohesion and harmony to be found in family firms which arise from high trust among employees, for example (Ruiz Jiménez, Vallejo Martos, & Martínez Jiménez, 2015). Finally, a culture characterized by openness can promote knowledge sharing in family firms (Hadjielias, Christofi, & Tarba, 2021).

### Embeddedness

A further antecedent we could identify is the topic of embeddedness which arises from different factors like family influence on ownership and management and values (Le Breton-Miller & Miller, 2009). This includes family and community embeddedness, where high family embeddedness might, just like high family involvement, lead to somewhat unethical behaviors and intensify the severity of problems instead of solving them (Gao et al., 2021). Its embeddedness degrees also determine whether agency or stewardship behavior will prevail in a family firm. Too much family embeddedness might introduce agency behaviors because it will lead to family utility being prioritized over business utility (Le Breton-Miller & Miller, 2009). Community embeddedness lets family firms direct efforts toward helping their community (Cox, Lortie, Marshall, & Kidwell, 2022) and fosters their environmental performance focus (Dekker & Hasso, 2016). Family firms feel responsible for helping their communities based on the importance that their local roots have for them (Berrone et al., 2010). The three major dimensions that determine family firms' actions for their communities are commitment to the community, community support, and sense of community (Niehm et al., 2008). The

cultural background family firms find themselves embedded in also significantly shapes their approaches to dealing with ethical difficulties. While an Aristotelian view rather shapes the Western world's approach to business ethics, the Eastern world tends to embrace a Confucian perspective. This difference can influence whether they even perceive a situation to be morally critical as, for example, in family firms shaped by Confucian logic, nepotism and gift-giving are respected business practices that can be regarded as virtuous (Sison et al., 2020).

*Conflict*

While many of the factors that we have examined so far either come with a bright and a dark side or are solely positive for family firms' processes to solve ethical problems, conflict rather negatively interferes with and hinders these. There are various types of conflict like task or relationship conflict. While task conflict has the potential to improve ethical performance, the latter type is found to have severe negative consequences for it. It hinders family firms on various levels by limiting not only their ability to execute but also to initially formulate ethical strategies (Sharma & Sharma, 2011) and it can lead to the development of negative traits in family members (Kidwell et al., 2012). Because of its negative impact on those, also role ambiguity should be reduced (Kidwell et al., 2012).

*Goals*

Taken together, factors like values, culture, or embeddedness play a crucial role in defining family firms' motivation to behave ethically (Ruf et al., 2021; Sharma & Sharma, 2011) and according firm goals (Koiranen, 2002). These can be economical and non-economic, focused on short- or long-term achievements, and are either family-centered or focus on the firm (Kotlar & De Massis, 2013). Some non-financial goals target SEW dimensions that are directly related to ethics of care (for example, the renewal of family bonds), and their pursuit fosters care-based morality (only for the wish to exert power as a goal that is not the case) (Richards, 2022). Goals vary heavily between individual family firms; they are crucial in determining the companies' ethical behavior as they predict for what those will strive. A family firm's meta-identity plays an important role in setting and achieving goals. It unites their family and business system and can serve as a decision heuristic (Shepherd & Haynie, 2009).

*Management and Governance*

How successful the process to achieve their goals is will differ between family firms and is influenced by many of the factors already outlined. These are often manifested in the governance (Bloemen-Bekx et al., 2021) and general management practices employed by family firms, which are typically shaped by a long-term orientation, and play a crucial role for family firms in achieving their goals. Implement-

ing processes to foster strategic management, which improve performance (Chrisman et al., 2004) for example, because they can enhance the family firm's openness towards and adoption of innovation can help family firms to avoid getting trapped in the innovator's dilemma (Gallo, 1998). In addition to that, family owners introduce control mechanisms and incentive schemes like shared profits and ownership to reduce agency problems (Chrisman et al., 2007). Agency and also stewardship governance mechanisms affect not only the behavior of the firm as a whole but also its individual employees' behavior. When high levels of both governance types are implemented, agency costs will be at their minimum while firm performance reaches its maximum. When there are high levels of stewardship and low levels of agency governance, agency costs will peak because stewardship governance promotes agency problems (Madison et al., 2017). Lastly, the contracts of family and non-family employees might have to be designed differently to work against agency problems. For example, family members can receive higher rewards for achieving short-term successes, while incentives fostering a more long-term focus can help compensate non-family employees (Block, 2011). Also, good knowledge management and cooperation with other institutions are crucial for family firms to meet their social responsibilities (Gallo, 2004). In general, ethics-related decisions and actions of family employees are also heavily guided by role modeling and leading by example, where problems emerge when role models themselves are unethical leaders (Adams et al., 1996; Aragón-Amonarriz et al., 2019; Cuadrado-Ballesteros et al., 2017). Another aspect regarding learning ethical behavior that Asian family business groups find rather helpful is to send their offspring to Western business schools (Dela Rama, 2012).

Additionally, employee identification can improve a family firm's ethical climate (Vallejo, 2009) and enable ethical decision making; it emerges from factors like perceived responsibility and value congruence between employees and the business family, for example (Reck, Fischer, & Brettel, 2021). Mentoring and training activities and job security policies combined with flexible job designs can also be used strategically to moderate the negative effect of nepotism on HR practices to become positive (Firfiray et al., 2018). Another measure that can be implemented to increase the fairness perceptions of family and non-family employees is open communication of SEW goals and employees' contributions to those. This enhanced transparency can increase fairness perceptions regarding preferential treatments for some employees since their cause may be those employees' contributions to SEW, which was previously not apparent to other employees (Samara & Paul, 2019).

*SEW and Social Considerations*

The astonishing importance that SEW and social aspects have to them when trying to find solutions for ethical dilemmas or tradeoffs is something that is unique to family firms and they are more virtue-oriented than non-family ones (Payne, Brigham, Broberg, Moss, & Short, 2011; Vazquez,

2018). There is heterogeneity among family firms in terms of how strongly they are guided by the aim to generate and sustain SEW (Cabrera-Suárez et al., 2014). However, when there is a conflict between economic and emotional or SEW-related arguments, family firms often give up economic benefit for emotional prosperity and use SEW as a reference point (Cennamo et al., 2012; Ding et al., 2016). Business families are highly loss averse regarding SEW and will even accept greater risk levels to maintain control over the firm (Gómez-Mejía et al., 2007). However, there may sometimes be tradeoffs between different SEW dimensions like the internal (family control and influence) and external (family reputation) one. When such a conflict is present, family firms are likely to focus on internal SEW preservation since that is more of a conscious decision; they will only switch to preserving external SEW when an actual threat for that arises (Vardaman & Gondo, 2014). Social considerations weigh stronger than purely economic ones when family firms have to make decisions, but Labelle et al. (2015) found a threshold of 36% family ownership above which social performance decreases with increasing ownership levels. In contrast to that, Berrone et al. (2010) stated, based on their research, that once ownership exceeds 33%, a positive influence that family ownership has on environmental performance drastically increases.

### 3.4.2. Outcomes

*Organizational Level Outcomes*

All of those antecedents' interplay induces various outcomes regarding ethical problems in family firms. On an organizational level change might generally follow, meaning that the potential to eliminate ethical problems, reduce tradeoffs, and prevent ethical issues from reoccurring exists and responsible family ownership can be established (Aragón-Amonarriz et al., 2019). However, problems, including their consequences, could also worsen when they are not appropriately managed.

Family firms likely introduce social initiatives (Dyer & Whetten, 2006) on different dimensions like community or employees to enhance their social performance (Bingham et al., 2011); also, striving for different dimensions of SEW will lead to a focus on different stakeholders (Cennamo et al., 2012). Family firms are less likely to lay off employees when this is potentially required because they believe that they have responsibility for their employees and attribute value to employment itself and not only its productive outcomes (Kim et al., 2020). Also, product quality might be improved; for example, despite the costs, it comes with to safeguard and improve family reputation, which is more likely to happen when there is a direct association between the family and the firm name (Dyer, 2006; Kashmiri & Mahajan, 2014). Family firms put great efforts into initiatives benefitting the environment as well and can adopt a proactive environmental strategy when their ethics are well-managed (Dou et al., 2019). Possible environmental strategies range from being

reactive (based on legality, their only goal is to avoid sanctions) to proactive (going beyond legal requirements) (Duh et al., 2010). By choosing and following an appropriate environmental strategy, family firms will reach their (non-)economic goals while the environment benefits (Sharma & Sharma, 2011). Such initiatives are essential for stakeholder management, where family firms typically adopt a more proactive approach than non-family ones to reach their goals (Bingham et al., 2011; Cennamo et al., 2012), especially when care-based morality is present (Richards, 2022). Family firms have a collectivist mindset and are typically concerned with all of their stakeholders' needs, leading to unique stakeholder salience arising from power, legitimacy, and urgency (Bingham et al., 2011; Mitchell et al., 2011). Also, family business identity, transgenerational orientation, and the relationship between the family and employees foster that (Cox et al., 2022).

As a result of striving for ethical behavior, wanting to solve ethical problems, and the previously listed outcomes, family firms might formulate and implement a concrete CSR strategy to improve their CSP. Family firms typically prefer focusing on the social dimensions of CSR here (Marques et al., 2014). Cabrera-Suárez et al. (2014) uncovered different profiles of family firms' CSR approaches ranging from firms that embrace CSR and want to utilize it as a competitive advantage to those that believe it comes with more costs and benefits and therefore do not go beyond what is required by law to reach conformity with ethical standards. Family firms' CSR aspirations will often be detained in an according report, but just like the CSR actions themselves (Marques et al., 2014), the CSR reports issued by family firms display much heterogeneity. They show less compliance with CSR standards than those of non-family firms but generally emphasize environmental and philanthropical issues (Campopiano & De Massis, 2015). Reasonable assurance helps improve the credibility of family firms' reporting, which was earlier pointed out to be questionable (Hsueh, 2018).

It would be beneficial for them, and some family firms are likely to introduce more formalization and professionalization regarding expected behaviors in a code of conduct (Dela Rama, 2012; Gallo, 1998). The formalization of ethical codes can be allowed for by collaborative dialogue; such norms function as a mediator between collaborative dialogue and firm performance. This process is characterized by the emergence of a "family point of view," but its existence in every family firm cannot be taken for granted (Sorenson, Goodpaster, Hedberg, & Yu, 2009). Some company rules could be established where this had not been done previously, and ethics training could be offered to guide decision-making towards expected compliance with specific ethical standards and allow the transfer of values (Hanson & Keplinger, 2021). Written ethical codes increase the efficiency of social performance by offering guidance for decision-making. However they are not very common in family firms, potentially because they consider it unnecessary and believe that their culture and values suffice for making ethical decisions (Adams et al., 1996; Cuadrado-Ballesteros et al., 2017) while this analysis

has proven the opposite. Taken together, such actions can be especially beneficial for firms operating in markets where corruption is usual and expected when they want to enter new markets where that is not the case (Dela Rama, 2012).

*Individual Level Outcomes*

Next to such outcomes on the organizational level, there are also outcomes on the individual level. As stated by Litz and Turner (2013) in the context of inherited ethical dilemmas, there are various behaviors family members can employ in the face of such a dilemma. They might either leave the firm or take responsibility and try to do something about the problem when they believe that the potential for that is given. However, there is also a potentially dangerous action from an ethical point of view: they could stay loyal to the family business without inducing any changes. Family members may find themselves trapped in a tradeoff between leaving or taking responsibility for the actions of previous generations by inducing change (Litz & Turner, 2013). After individuals of current generations show severe unethical behavior, it is also crucial for family firms to offer them the opportunity and potentially push them to (honorably) exit the firm (Kidwell et al., 2012). Nevertheless, family firms can be stringent here and employ informal measures to quickly remove employees who behave severely unethical from the organization (Reck et al., 2021). Finally, the creation of intangible capital through ethical actions, which is valued by the family, can make succession more attractive for successors who initially showed low levels of commitment (Parker, 2016).

*Consequences*

Lastly, there is a final level of consequences evoked by the previously listed outcomes that display their broader effect on the family and the firm. Through their stewardship (Davis et al., 2010) and ethical behavior, family firms' financial performance is influenced when that behavior (O'Boyle et al., 2010; Payne et al., 2011) and social capital are leveraged as a competitive advantage (Azizi et al., 2022). Also, place-basedness (Kim et al., 2020) and CSR orientation can positively contribute to family firms' economic performance, for example, because community support is an effective business strategy where businesses expect reciprocal actions from communities in return for their generosity (Niehm et al., 2008). Contrary to what some family firms believe when they say that it is too costly for them to engage in ethical behavior, this behavior often leads to financial returns that are greater than its costs. This is, for example, the case concerning obtaining eco certifications for products (Delmas & Gergaud, 2014). Some strategies that parents can employ to make succession more attractive to their children will even enhance family firms' financial performance as they generate social and intangible capital like tacit knowledge (Parker, 2016). This should reduce the willingness of potential successors to sell the business because while its value for the family grows through intangible capital, its market value does not (Parker,

2016). Dyer (2006) found out that family firms embracing a clan culture are the best performing ones.

However, ethical behavior cannot only enrich family firms' economic capital, but it will also or maybe even primarily increase their SEW as described in various previous examples.

Both of those aspects can be maintained long-term and thus ensure firm longevity (Vallejo, 2009), and potentially the resilience of family firms is also increased when these companies find appropriate ways to manage the ethical problems they find themselves confronted with (Hanson & Keplinger, 2021). This is because their ethical behavior then becomes a competitive advantage. It also increases the credibility of family firms as their CSP level rises, and they will be rewarded with more trust from their stakeholders (Duh et al., 2010).

However, if family firms fail to cope with ethical problems, they will miss valuable opportunities and potentially destroy not only their business but also family ties and relationships. When for example principal-principal conflicts continue to exist and potentially even grow in family firms, they will destroy their value (Purkayastha et al., 2019).

## 4. Discussion

### 4.1. Theoretical and Practical Implications

Based on our findings, we have formulated some implications that are relevant to different theories and practitioners.

#### 4.1.1. Implications for Theory

Our research extended the research field on family business ethics by collecting and synthesizing the available information on ethical problems and how they are being solved in family firms which had not been done before. We thereby answered Vazquez's (2018) call for more research in family business ethics, just as some other scholars like Krishnan and Peytcheva (2019) and Gao et al. (2021) did. Previous research rather focused on individual aspects of ethical problems in family firms; therefore, this thesis can lay the groundwork for future research, which takes the broad picture we have created into account. Nevertheless, our study has also shown that some areas of ethical problems in family firms have not been sufficiently investigated until today, so we hope that researchers will focus on those in the future to empirically back up and broaden the insights we have provided. For many of the factors that we listed as antecedents of solving ethical problems in family firms, their exact effect also remained unclear, which is the case for religiosity, for example. Here, it would be important that scholars further define their effects. We believe that given the various research streams we drew our results from, it could make sense to adopt an interdisciplinary approach to researching family firm ethics. Scholars from fields like family business and business ethics but also psychology and other social sciences could work together to derive meaningful insights supported by different theories like stakeholder, organizational

justice, institutional logics, agency, and stewardship theory. Finally, we think that organizational theory should begin to more heavily take ethical issues in family firms into account and devote specific research to them.

### 4.1.2. Implications for Praxis

We believe that our findings are important to various practitioners from the family business field as well. This thesis has undoubtedly proven that just as family firms face unique ethical issues, they find unique ways of dealing with them. Practitioners must become more aware of the ethical problems that are present in their firms so that in a second step, they can begin to manage those in an effectful way or even prevent their reoccurrence. Especially family firm owner-managers should ask themselves what their influence is on the firm and be self-critical in order to determine where problems could arise based on their powerful position and involvement. Additionally, it is vital for family firms to not only focus on external stakeholders when aiming to implement ethical behaviors. They must especially take a look at their internal justice climate because, as seen previously, this is a significant concern for many non-family employees. If family firms do not get a hold of this issue, they will likely increase the problem they already often face around attracting and sustaining excellent and motivated non-family employees (Kahlert, Botero, & Prügl, 2017). When aiming to manage ethical problems, many family firms must probably start by formulating some processes in this regard. As this systematic review has shown, little is known about these so far, and given the lower formalization degrees in family firms, it is likely that such processes are often not in place. However, in the face of the vast number of ethical problems we found in family firms, implementing such processes and informing researchers about them would certainly prove beneficial to family firms.

Also, family firm consultants should be aware of these aspects in order to gain the ability to offer family firms customized services that actually work there. Given the uniqueness of ethical problems apparent in family firms, it is likely that consultants trying to solve them as they do in large widely held firms will not succeed in most family firms.

Our results can also be relevant to politicians and policymakers. Since, to our knowledge, no previous work focused exclusively on the ethical problems that family firms face, it is likely that these have not been sufficiently taken into account in many policies and legal regulations. Therefore, policymakers and regulators should get an understanding of those problems and aim at designing efficient ways of reducing them, for example, by limiting the likelihood of their occurrence and severely punishing them.

### 4.2. Avenues for Future Research

Even though the quantity of research on the intersection of family firms and business ethics has increased over the past few years, many areas still need to be explored in that regard. Based on our extensive review of the existing literature around family firm ethics, we could identify various directions that should be investigated in further research.

Even though the most significant share of our results arose based on findings that other researchers have empirically proven, they have never been synthesized to conceptualize family business ethics in the way we did. Therefore, it would be interesting to empirically test our findings, especially while considering family firm heterogeneity. Researchers could aim to evaluate how exhaustive the list of ethical problems we have presented is and what factors in a family firm (for example, firm size, age, country of origin, differences in owner families) determine which problems will prevail in different types of family firms. This would be especially intriguing regarding those of the ethical problems we described that were backed up by a relatively small number of sources. The same could be done to assess the validity and outcomes of the antecedents and outcomes of ethical problem-solving in family firms that we formulated. Also, some of the conceptual work that our results were built on should be empirically validated to enhance the robustness of our findings.

A second critical angle for future research can be derived from the scarcity of available knowledge on the processes that family firms employ to solve ethical problems. Thus far, these remain a black box, and future research should reveal more details on them to better understand the mechanisms and dynamics that come into play in family firms in the face of ethically challenging situations and when it comes to ethical decision-making. Two factors in this regard that further research could be devoted to are the exact costs that family firms are willing to incur to solve ethical problems and the role that emotions play in family firms when moral business practices are developed.

Future research must not only focus on the positive effects that ethical behavior can have for family firms but should also take the consequences of unethical behavior into account. An interesting avenue for future research opens up regarding others' perceptions of ethical wrongdoing in family firms. It would be interesting to find out how society views and punishes ethical wrongdoing of family firms, potentially compared to that of non-family firms.

Additionally, future studies could aim to determine how family firms deal with unethical behavior of their internal and external stakeholders. We could already imply some actions they would take when employees act unethical like offering them an honorable exit, but these should be further explored. With regard to external stakeholders, it would, for example, be appealing to know how family firms react to finding out that some of their suppliers can be considered unethical.

Future research could also investigate what moral frameworks like Utilitarianism, Deontology, or virtue ethics family firms typically employ even if they do not consciously do so. This would help to better understand their ethical actions, decision processes, and what they view as ethical.

Finally, we have seen that the perspective which most of the research on family firms and their ethics has taken is

shaped by developed countries and their attributes. In the future, also developing countries should become more represented here to reveal what findings from those fields hold true when the institutional environment is weaker, for example.

### 4.3. Limitations

As already implied in some of the directions for future research we outlined, the methodology we employed in this study is subject to some limitations that are often inherent to systematic reviews.

The main limitation is that we might not have obtained all the relevant literature for our topic. Through searching for literature in multiple databases and conducting a thorough forward and backward search, we tried to keep the risk that this happened as small as possible, but nevertheless, it will always be apparent in systematic reviews. Based on our inclusion and exclusion criteria, it is likely that we missed relevant data that was presented in journals which received lower ranking scores, in other document types than journal articles or that was published in languages other than English.

Additionally, our topic has an immense scope with many distinct areas that we touched upon in our results. It would be possible to investigate each of those in much more detail, which would have been beyond the scope of this review but excluding some topics would have created a distorted image. Therefore, our analysis might lack some details and deeper information.

Another major limitation that influenced this thesis is the lack of definitional clarity evident in the studies we investigated. As noted by Vazquez (2018) and previously explained by us, already the term family firm is not clearly defined in the literature. It is, therefore, difficult to appropriately synthesize the literature on family firms since different definitions for family firms might have been employed that are sometimes not explicitly stated. Therefore, the firms investigated in the studies we used in our analysis might have not always been entirely comparable. Much more rigor must be introduced to the family business field in this regard, and researchers should more strictly account for heterogeneity among family firms and avoid broad generalizations. Our results might hold true to varying degrees for different types of family firms. Nevertheless, they still provide some general insights into various factors that determine the ethical problems faced by family firms, their reactions to those and according outcomes. The same issue is relevant for the definitions of other concepts like CSR or social capital.

Furthermore, the limitations which were inherent to the studies we used in our analysis must also be taken into account when assessing the validity of our results. Many empirical researchers like Litz and Turner (2013) complained that it is difficult to obtain reliable data on family firms and their behaviors. They often rely on the information that employees or owner-managers of those companies are willing to share, which can be rather limited when sensitive topics like ethical problems that are connected to much confidential information are investigated. Many other studies also relied on secondary data, which can never be as accurate as data specifically obtained for a study. Lastly, our results were influenced by much conceptual work that still lacks empirical evidence; it is, therefore, questionable to what degree those conceptualizations hold in praxis.

## 5. Conclusion

This thesis contributes to closing the research gap around ethical problems in family firms and how they deal with them. Based on the systematic review of 110 articles from peer-reviewed academic journals, we show that family firms face a set of unique ethical dilemmas. Those can either be family-based or business-based and we uncover the antecedents and outcomes of the processes that family firms employ to solve them. These ethical problems emerge from operating the business and from issues and dynamics within the owning family. Many of them are based on agency conflicts and fraudulent business practices within the firm or tradition and succession difficulties faced by the family. When family firms manage to deal with ethical problems appropriately, they will be rewarded for that in various ways, including improved financial performance and the preservation of potentially all SEW dimensions. However, when they fail to do so, this can have dramatic consequences for the owning family, and an unethical climate might ultimately lead to firm failure. Therefore, in the long run, it is best for family firms to not only focus on the maximization of firm or family economic value but to take care of all stakeholders and behave in an ethical manner. So far, not too much information has been uncovered regarding the precise ways in which family firms deal with ethical issues. However, during our analysis, it became evident that family involvement and its various consequences play an important role here, combined with external factors and firm characteristics. Those things shape, for example, firm values, spirituality, and culture, and taken together these define firm goals and the outcomes that will follow family firms' aspirations to solve ethical problems. SEW plays a crucial role in determining these outcomes because family firms frequently use it as a reference point. Through our analysis, we could also show that many things like family involvement, must not always have solely positive consequences in terms of firm morality, and also spirituality can be viewed as a "double-edged sword" in that regard. It is therefore crucial that family firms and their advisors develop appropriate practices to deal with ethical issues and potentially formalize them and that researchers continue to further investigate the elements of the processes that family firms employ to solve ethical problems and their effects.

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# Visual Appeal of Product Novelty: The Role of the Brand in Design Adaptation

# Visuelle Wirkung von Produktneuheiten: Die Rolle der Marke bei der Designanpassung

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**Abstract**

Product design plays an important role in the purchasing decision of goods such as cars or smartphones. In practice, to symbolize novelty in the presentation of asuccessor in a product series, the proportion of design elements is often changed. Despite the popularity of proportion changes, the effect of this design adjustment method on consumers' aesthetic pleasure has not yet been studied This work constructs a theoretical framework that explains how changes in proportion affect visual processing, drawing on both categorization theory and processing fluency theory. It posits that changes in proportion can act as a determinant of processing fluency, thereby influencing aesthetic pleasure. To verify the conceptual framework, a two-factor online experiment is conducted using smartphones from a strong and weak brand to test the postulated effect of proportion changes. It is found that the proportion change of a product design of a strong brand reduces processing fluency. However, the proportion change does not affect aesthetic pleasure.

**Zusammenfassung**

Das Produktdesign spielt eine wichtige Rolle in der Kaufentscheidung von Gütern wie Autos oder Smartphones. Um bei der Vorstellung eines Nachfolgers einer Produktserie Neuheit zu symbolisieren, wird in der Praxis oft die Proportion von Designelementen verändert. Trotz der Popularität von Proportionsveränderungen wurde die Wirkungsweise dieser Designanpassungsmethode auf das ästhetische Gefallen der Konsumenten bislang noch nicht untersucht. Auf Basis der Kategorisierungstheorie und der Processing Fluency Theorie wird in dieser Arbeit ein konzeptuelles Framework entwickelt, welches die Wirkung der Proportionsveränderung auf die visuelle Verarbeitung theoretisch erklärt. Dabei wird erläutert, wie die Veränderung der Proportion als Determinante der Processing Fluency agieren könnte, um das ästhetische Gefallen zu beeinflussen. Zur Überprüfung des konzeptuellen Frameworks wird in einem zweifaktoriellen Onlineexperiment anhand von Smartphones einer starken sowie schwachen Marke die postulierte Wirkungsweise der Proportionsveränderung getestet. Dabei wird festgestellt, dass die Proportionsveränderung eines Produktdesigns einer starken Marke die Processing Fluency reduziert. Die Proportionsveränderung wirkt sich jedoch nicht auf das ästhetische Gefallen aus.

*Keywords:* Verarbeitungsflüssigkeit; Produktdesign; Markenbildung; Ästhetik; Kategorisierungstheorie.

## 1. Einleitung

Das Design eines neuen Produktes ist ein wichtiges Differenzierungsmerkmal gegenüber Wettbewerbsprodukten (Bloch, 1995). So zeigen Studien, dass das Produktdesign von Autos oder Elektronikgeräten wie Mobiltelefonen oder Laptops eine wichtige Rolle in der Kaufentscheidung einnimmt und den Verkaufserfolg mitbestimmt (Chitturi, Raghunathan & Mahajan, 2008; Heitmann, Landwehr,

Schreiner & van Heerde, 2020; Landwehr, Labroo & Herrmann, 2011; Landwehr, Wentzel & Herrmann, 2013; Liu, Li, Chen & Balachander, 2017; Rubera, 2015; Talke, Müller & Wieringa, 2017). Ikonische Produktserien wie der VW Golf oder das Apple iPhone charakterisieren sich durch Beständigkeit im Design und sind über Jahrzehnte hinweg erfolgreich (Eschment, 2020; Segall, 2016). Der VW Golf, seit 1974 auf dem Markt, war wiederholt das meistverkaufte Auto Europas (Volkswagen AG, 2019, 2021) und das Apple iPhone, seit 2007 auf dem Markt (Apple Inc., 2007), wiederholt unter den meistverkauften Smartphones (Finkel, 2020; Lido, 2021). Die bisherige Forschung zeigt, dass die Marke des Produktes Einfluss auf die Wahrnehmung des Produktdesigns ausübt und die Präferenz für Designkontinuität treibt (Heitmann et al., 2020; Liu et al., 2017; Talke et al., 2017). Bei der Neuauflage eines Produktes stellt sich folglich für das Produktdesign die Frage, in welcher Relation sich typisches Design und Designneuheit gegenüberstehen stehen sollten, um auf Anklang bei den Konsumenten zu stoßen.

Bei der ästhetischen Gestaltung von Nachfolgemodellen einer Produktserie können unter anderem die Veränderung der Dimension, der Kontur oder Silhouette, der Materialfarbe, der Textur, der strukturellen Anordnung von Elementen sowie Proportionen des Produktes vorgenommen werden (Bloch, 1995; Talke et al., 2017). In der Neuauflage ikonischer Produktserien wie dem VW Golf oder dem Apple iPhone ist festzustellen, dass im Vergleich zum Vorgängermodell wenige Designveränderungen vorgenommen werden. Unter diesen inkrementellen Veränderungen sticht die Proportionsveränderung als ein wichtiges Mittel zur Symbolisierung von Produktneuheit hervor. Proportionen lassen sich dabei nach Kohler (2003) aus zwei Sichtweisen definieren. Die erste Sichtweise definiert Proportionen eines Objektes als „das Verhältnis der Seiten einer Fläche zueinander" (Kohler, 2003, S. 51). Die zweite Sichtweise definiert Proportionen innerhalb eines Objektes als Größenverhältnisse von Teilflächen zueinander. Beispielhaft lassen sich die Definitionen der Proportion anhand einer Autotür erläutern. Das Verhältnis der Höhe zur Breite einer Autotür geben die Proportionen mit Blick auf die Längenverhältnisse an (Kohler, 2003). Die relative Größe des Autotürfensters (als Teilfläche) im Verhältnis zum restlichen Teil der Autotür gibt die Proportionen mit Blick auf die Größenverhältnisse an (Talke et al., 2017). Die relative Proportion eines Elements lässt sich als prozentualer Anteil beschreiben, welcher relativ zur Gesamtfläche eingenommen wird. Unter Anwendung dieser zweiten Sichtweise können bei den Apple iPhone Modellen Proportionsveränderungen als wichtiges Mittel zur Symbolisierung von Designneuheit identifiziert werden. Bei der Betrachtung von Produktbildern des neuen Apple iPhone 13 Pro fallen zwei Elemente in direktem Vergleich zum Vorgängermodell Apple iPhone 12 Pro auf. Erstens, die Proportionsvergrößerung der Kamera relativ zur Fläche der Smartphonerückseite. Und zweitens, die Proportionsverkleinerung der Notch relativ zum Display des Smartphones. Die Dimension (Gesamtgröße) des Nachfolgermodells im Vergleich zum Vorgänger ist dabei gleichgeblieben (La Rocco, 2021). Eine ähnliche De-

signanpassungsmethode wurde auch in der Vergangenheit in dieser Produktserie angewandt. Durch die Vergrößerung der Dimension beim Apple iPhone 5 oder Apple iPhone 6, verglichen zu ihren jeweiligen Vorgängern, hat sich in beiden Fällen die Proportion der Kamera relativ zur Fläche der Smartphonerückseite verkleinert (Hery-Moßmann, 2021). Die Proportionsveränderung stellt eine Methode der Designneuerung dar, welche keine gravierende Änderung des markentypischen Designs der Vorgängermodelle mit sich bringt.

Die empirische Ästhetik beschäftigt sich seit Gustav Theodor Fechner (1876) mit idealtypischen Proportionen, berühmterweise mit denen eines Rechtecks in Form des Goldenen Schnitts. Im Marketing haben Raghubir und Greenleaf (2006) im Feld des Verpackungsdesigns die Rolle der Proportionen erforscht und festgestellt, dass kontextabhängig bestimmte Proportionen präferiert werden. Diese Forschungsarbeit greift die Kontextabhängigkeit der Proportionen auf die visuelle Wirkung auf, untersucht allerdings keine idealtypischen Proportionen. Stattdessen wird die Wirkung der Veränderung von Proportionen als ein Mittel zur Signalisierung von Produktneuheit im Kontext der Marke untersucht. Die Proportionsveränderung wird als eine Methodik behandelt, welche Einfluss auf die Typikalität eines Produktes nimmt. Die Typikalität eines Objekts ist laut Reber, Schwarz und Winkielman (2004) eines der Treiber von Processing Fluency. Processing Fluency entsteht, wenn dem Ziel der Erkennung oder Interpretation eines Stimulus mittels vorhandenen affektiven oder kognitiven Kapazitäten nähergekommen wird (Reber et al., 2004). Das Gefühl von Processing Fluency ist hedonisch markiert und kann beim Betrachter ästhetisches Gefallen für den Stimulus auslösen (Graf & Landwehr, 2015; Reber et al., 2004). Die Typikalität eines Produktes ist hoch ausgeprägt, wenn es verglichen zu einer mentalen Referenzkategorie viele Gemeinsamkeiten aufweist und damit für typisch aussehend befunden wird. Das Vorhandensein dieser Gemeinsamkeiten führt zu einer fluenten Verarbeitung des Objektes und mündet in ästhetischem Gefallen (Landwehr et al., 2011). Bei der ästhetischen Beurteilung von Produkten spielen nach Talke et al. (2017) drei Referenzkategorien eine Rolle: die Segmentkategorie, die Markenkategorie und die Produktserienkategorie. Die Typikalität eines Produktes wird verglichen zu diesen Kategorien unterschiedlich wahrgenommen. Beispielsweise kann ein Produkt, welches typisch für seine Marke aussieht, weniger typisch für das Segment aussehen. Aufgrund der unterschiedlichen Typikalitätswahrnehmung fällt von der Kategorisierung abhängend das ästhetische Urteil unterschiedlich aus (Talke et al., 2017). Heitmann et al. (2020) haben festgestellt, dass die Markenkategorie eine höhere Relevanz in der ästhetischen Beurteilung einnimmt, wenn es sich um ein Produkt einer starken Marke handelt.

Im Rahmen dieser Forschungsarbeit wird die Proportionsveränderung als mögliche Determinante der Processing Fluency untersucht, die in Konsequenz Einfluss auf das ästhetische Gefallen nimmt. Um die mögliche Wirkungsweise der Proportionsveränderung zu erklären, wird ein konzep-

tuelles Framework aufgestellt. Processing Fluency nimmt in dem Modell die Rolle des Mediators ein, welcher die Beziehung zwischen der Proportionsveränderung und dem ästhetischen Gefallen vermittelt. Der Ausgangspunkt für das theoretische Modell ist der Umstand, dass in der ästhetischen Urteilsbildung eines Produktes die mentale Kategorisierung von Objekten einen wichtigen Einfluss auf die Typikalitätswahrnehmung und damit auf die subjektive Processing Fluency Erfahrung nimmt (Graf & Landwehr, 2015; Heitmann et al., 2020; Liu et al., 2017; Talke et al., 2017). Der Einfluss der Marken- und Produktserienkategorie auf die Fluency Erfahrung wird dem theoretischen Modell zufolge durch die Markenstärke beeinflusst (Heitmann et al., 2020; Talke et al., 2017). Deshalb wird die Mediation durch die Processing Fluency durch die Markenstärke moderiert. Auf Basis des konzeptuellen Modells werden abhängig von der Markenstärke Vorhersagen über die Wirkungsweise der Proportionsveränderung gemacht, die in einer empirischen Onlinestudie anhand von Smartphones erprobt werden.

Diese Arbeit leistet mindestens drei Beiträge zur Forschung im Feld der Processing Fluency und des Produktdesigns. Erstens handelt es sich nach bestem Wissen des Autors um die erste Forschungsarbeit, welche den Einfluss einer Proportionsveränderung auf das ästhetische Gefallen von Produkten konzeptuell modelliert und empirisch untersucht. Zweitens wurden Typikalitätsveränderungen in der Processing Fluency Forschung bislang durch das Morphing Verfahren grundgesamt manipuliert (z.B. Landwehr et al., 2011; Landwehr et al., 2013), sodass alle Designmerkmale zur Typikalitätsveränderung beigetragen haben. Diese Forschungsarbeit widmet sich mit der Proportionsveränderung einer gezielten Typikalitätsveränderung eines Designmerkmals und untersucht dessen Auswirkung auf die Fluency Erfahrung. Drittens kommt die Forschungsarbeit dem Aufruf von Heitmann et al. (2020) nach und untersucht experimentell den Einfluss der Marke auf die Typikalitätswahrnehmung.

Im nachfolgenden Kapitel 2 wird das konzeptuelle Framework für die Wirkungsweise der Proportionsveränderung auf Basis der Kategorisierungstheorie und der Processing Fluency Theorie hergeleitet. In Kapitel 3 werden das Forschungsdesign und die Ergebnisse des Experiments erläutert. Im letzten Kapitel werden im Rahmen der generellen Diskussion der theoretische Beitrag, die Implikationen für das Management sowie die Limitationen und der zukünftige Forschungsbedarf diskutiert.

## 2. Theoretische Herleitung

In den folgenden Unterkapiteln wird das konzeptuelle Fundament für die Wirkungsweise der Proportionsveränderung im Produktdesign gelegt. Hierfür wird zunächst in Kapitel 2.1 die Rolle der visuellen Kategorisierung von Objekten im menschlichen Gedächtnis erläutert. Dabei wird auf das Familiaritätsempfinden basierend auf der Kategorisierung eingegangen. Nachfolgend wird in Kapitel 2.2 die Auswirkung der Familiarität auf die Typikalitätswahrnehmung, die Processing Fluency und das ästhetische Gefallen ausgeführt. In

Kapitel 2.3 wird im Produktkontext die Rolle der mentalen Referenzkategorien in der visuellen Verarbeitung behandelt. Auf Basis dessen wird in Kapitel 2.4 der Einfluss der Marke auf die Typikalitätswahrnehmung beschrieben. Anschließend folgt in Kapitel 2.5 die Beschreibung der Wirkungsweise der Proportionsveränderung im Kontext der Markenstärke und der Processing Fluency sowie die Formulierung der Forschungshypothesen.

### 2.1. Visuelle Kategorisierung und Familiarität

Der Kategorisierungstheorie zufolge gilt der Akt der Kategorisierung von Objekten als ein fundamentales Anwendungsprinzip von Menschen (Mervis & Rosch, 1981). Der Akt der Kategorisierung bezeichnet nach Palmeri und Gauthier (2004) den menschlichen Entscheidungsprozess ein Objekt einzuordnen. Die dem Prozess zugrundeliegenden mentalen Kategorien sind definiert als eine ähnlichkeitsbasierte Generalisierung von Objekten. Unterschiedliche Kategorien können dabei in Form von Subkategorien in einer hierarchischen Beziehung zueinanderstehen. Der Grad der Generalisierung einer Kategorie hängt von ihrer hierarchischen Ebene ab (Palmeri & Gauthier, 2004). Laut Rosch und Mervis (1975) verfügt jede Kategorie über einen mentalen Prototyp, der durch einen Lernprozess aufgrund von Expositionen zu Objekten aus derselben Kategorie reift und die Kategorie repräsentiert. Der mentale Prototyp ist eine abstrakte Repräsentation der Kategorie auf Basis des Durchschnitts der Kategoriemitglieder, welcher typische perzeptuelle und funktionelle Attribute abbildet. Die Detailtiefe des mentalen Prototyps nimmt mit einem abnehmenden Hierachiegrad der Kategorie zu (Palmeri & Gauthier, 2004). Die erste Kategorisierung bei initialer Exposition zu einem Objekt erfolgt üblicherweise auf der Basisebene. Die Basiskategorie verfügt über Mitglieder, die eine hohe Zahl an gemeinsamen perzeptuellen und funktionellen Attributen aufweisen (Palmeri & Gauthier, 2004; Rosch, Mervis, Gray, Johnson & Boyes-Braem, 1976). Damit verfügt sie über die höchste Zahl an Kategoriemitgliedern, über die sich ein visueller Durchschnitt bilden lässt (Rosch et al., 1976). Die Expertise (Familiarität) mit dem Objekt entscheidet darüber, ob und inwiefern die Kategorisierung auf untergeordneten oder übergeordneten Kategorieebenen fortgesetzt wird (Palmeri & Gauthier, 2004). Johnson und Mervis (1997) haben in ihren Studien festgestellt, dass die Geschwindigkeit und Effizienz im Abruf von Informationen aus Subkategorien im Vergleich zur Basiskategorie im Gedächtnis des Betrachters mit der Expertise zunimmt. Bei hoher Familiarität kann die Subkategorie demnach eine ähnliche starke Funktion zur Basiskategorie in der visuellen Verarbeitung einnehmen. Zur Beurteilung eines Objektes wird damit auf erlerntes Wissen von Kategorien zurückgegriffen, die mit dem Zielobjekt visuell am stärksten assoziiert sind. Die Typikalität eines Objektes hängt davon ab, wie nah dessen Attribute sich zum mentalen Prototyp befinden (Rosch & Mervis, 1975).

Die Kategorisierung wird bei natürlichen Objekten wie Menschen, Tieren oder Pflanzen, aber auch artifiziellen Objekten wie einem Stuhl oder einem Auto angewandt (Rosch & Mervis, 1975). Die Kategorisierung eines Objekts aus Sicht

eines Individuums lässt sich zum Beispiel anhand der Observation eines Halsbandsittichs durchspielen. Bei einem Spaziergang im Park begegnet einer Person ein grünliches Lebewesen, welches in der Lage ist zu fliegen. Aufgrund der typischen perzeptuellen und funktionellen Attribute des Lebewesens erfolgt erwartungsgemäß die Kategorisierung des Objektes anhand der Basiskategorie „Vögel". Die übergeordnete Kategorie lautet „Tiere", währenddessen die Subkategorien unter anderem die Ordnung „Papageien", die Familie „Eigentliche Papageien", die Gattung „Edelsittiche" und die Art „Halsbandsittiche" umfassen (CABI, 2021). Sofern zum Beispiel tieferes Wissen über die Subkategorie „Halsbandsittiche" vorhanden ist, können diese Informationen schnell und mühelos abgerufen werden. In diesem Fall erfolgt die visuelle Verarbeitung unter dominierendem Einfluss dieser Subkategorie. Andernfalls dominiert die Basiskategorie den Verarbeitungs- und Beurteilungsprozess. Die Detailtiefe des mentalen Prototyps ist höher ausgeprägt, je niedriger sich die Subkategorie in der Hierarchie befindet. Währenddessen die Kategorie „Vögel" die typische Gestalt eines Vogels und die gängigen funktionellen Attribute wie das Fliegen mental wiedergibt, werden in der Subkategorie „Halsbandsittiche" typische Merkmale wie das Halsband, die grüne Farbe, der rötliche Schnabel als perzeptuelle Attribute oder das spezifische Zwitschern als funktionelles Attribut im mentalen Prototyp reflektiert (in Anlehnung an Palmeri & Gauthier, 2004). Die Familiarität mit dem betrachteten Objekt beeinflusst das angereicherte Wissen, welches mental abgespeichert ist und in Konsequenz die mentale Kategorie, welche zur Beurteilung des Objektes herangezogen wird.

## 2.2. Typikalität, Processing Fluency und ästhetisches Gefallen

Die Familiarität beeinflusst, wie im vorherigen Kapitel beschrieben, die mentale Kategorisierung von Objekten und infolgedessen die Verarbeitung von Objekten. Die Beurteilung abhängig von der Kategorie wirkt sich auf das ästhetische Gefallen eines Objektes aus. Ein wesentlicher Faktor hierfür ist die Processing Fluency, auf die in diesem Kapitel vertieft eingegangen wird.

Der Zusammenhang zwischen mentaler Kategorie und ästhetischem Gefallen wurde unter anderem anhand des Beauty-in-Averageness Effekts (Langlois & Roggman, 1990) und des Ugliness-in-Averageness Effekts (Carr et al., 2017) an menschlichen Gesichtern als Stimuli empirisch demonstriert. Der Beauty-in-Averageness Effekt steht für die ästhetische Attraktivität eines Morphs. In diesem Kontext bezeichnet das Morphing die visuelle Durchschnittsbildung aus mehreren Gesichtern, woraus ein Morph entsteht. Der Morph steht damit sinnbildlich für ein typisch aussehendes Gesicht. In der Studie von Langlois und Roggman (1990) wurde festgestellt, dass ein Morph aus acht oder mehr individuellen Gesichtern (in der Studie bis zu 32 Gesichter) von Probanden als attraktiver empfunden wurde als die individuellen Gesichter jeweils (Langlois & Roggman, 1990). Als Treiber für das Attraktivitätsempfinden wird dabei die

Familiarität gesehen. Im Zuge der Kategorisierung des Morphs fallen im mentalen Abgleich mit der Basiskategorie für menschliche Gesichter viele Gemeinsamkeiten auf. Infolgedessen lässt sich feststellen, dass ein individuelles Gesicht, welches dem visuellen Durchschnitt ähnlicher ist und damit eine höhere Typikalität aufweist, durchschnittlich als attraktiver beurteilt wird (Langlois & Roggman, 1990). Der Beauty-in-Averageness Effekt greift nach Carr et al. (2017) allerdings eher für unbekannte Gesichter. Für familiäre Gesichter werden durch die mehrmalige Begegnung stärkere stimulusbezogene Gedächtnisspuren gebildet. Die stimulusbezogene, mentale Repräsentation ist detailreicher, sodass differenzierende Merkmale gegenüber dem mentalen Prototyp der Basiskategorie in der visuellen Verarbeitung deutlich werden können. Anders als beim Beauty-in-Averageness Effekt, bei dem gemeinsame Attribute zwischen dem Stimulus und dem mentalen Prototyp der Basiskategorie in ästhetische Präferenz für den Stimulus mündet, wird bei für sich genommen familiären Stimuli von Carr et al. (2017) ein Ugliness-in-Averageness Effekt festgestellt. Die Zusammenführung von für sich genommen familiären Gesichtern führte dazu, dass der Morph subjektiv eine geringere Familiarität reflektiert. Im Zuge der Kategorisierung des Stimulus hat die Basiskategorie eine geringere Relevanz. Aufgrund der Familiarität mit den individuellen Gesichtern erhält die mentale Subkategorie eine höhere Relevanz in der Beurteilung. Die Subkategorie verfügt über einen detailreicheren mentalen Prototyp, durch welchen charakteristische Merkmale mental eingeprägt werden. Der Verlust der charakteristischen Merkmale im Morph verglichen zum mentalen Prototyp der Subkategorie suggeriert eine geringere Typikalität. Der Morph erscheint in Konsequenz unattraktiver gegenüber dem individuellen Stimulus (Carr et al., 2017).

Die Processing Fluency wird als Treiber für den Beauty-in-Averageness Effekt (Carr et al., 2017; Winkielman, Halberstadt, Fazendeiro & Catty, 2006) als auch für den Ugliness-in-Averageness Effekt (Carr et al., 2017) gesehen. Processing Fluency entsteht, wenn dem Ziel der Erkennung oder Interpretation eines Stimulus mittels vorhandenen affektiven oder kognitiven Kapazitäten nähergekommen wird (Reber et al., 2004). Das Empfinden von Fluency signalisiert dabei Vertrautheit oder Familiarität gegenüber dem Stimulus (Reber et al., 2004). Das Gefühl von Fluency ist hedonisch markiert und monotonisch steigend mit positivem Affekt verbunden. Der positive Affekt der Fluency mündet in ästhetisches Gefallen, wenn der Betrachter die Fluency nicht als Treiber der positiven Empfindung identifiziert. Die Typikalität eines Stimulus gilt als eines der Treiber von Processing Fluency (Reber et al., 2004). Je typischer ein Stimulus für den Betrachter aussieht, desto einfacher lässt er sich verarbeiten. Die einfache Verarbeitung eines typischen Stimulus führt dabei, nach Reber et al. (2004), zu ästhetischem Gefallen. Dieses Phänomen wird anhand des Beauty-in-Averageness Effekts deutlich. Der typische aussehende Morph wird in seiner Ästhetik gegenüber den wenig familiären Gesichtern bevorzugt (Langlois & Roggman, 1990). Der Abgleich zwischen dem mentalen Prototyp der Basiskategorie für Gesichter und dem Morph

weist hohe Konsistenzen auf, verläuft deshalb mühelos und fluent. Der Morph wird in Folge als attraktiver empfunden (Carr et al., 2017). Den Zusammenhang zwischen der Kategorisierung und der Processing Fluency für den Beauty-in-Averageness Effekt haben Winkielman et al. (2006) ebenso für gewöhnliche geometrische Muster oder zufällige Punktmuster als Stimuli demonstriert. Carr et al. (2017) zeigen anhand des Ugliness-in-Averageness Effekts, dass die Typikalitätswahrnehmung eines Stimulus und damit die Fluency Erfahrung von der dominierenden Referenzkategorie abhängt. Der Abgleich zwischen dem Morph aus familiären Gesichtern und dem mentalen Prototyp der dominanten Subkategorien weist Inkonsistenzen auf, verläuft mühevoll und verringert dadurch die Processing Fluency. Die Typikalität des Morphs fällt im Abgleich mit der genaueren mentalen Repräsentation der Subkategorie geringer aus und macht sich durch eine weniger fluente Verarbeitung bemerkbar (Carr et al., 2017).

Für die Typikalitätswahrnehmung und infolgedessen das ästhetische Gefallen ist daher die subjektive Familiarität mit dem Stimulus entscheidend. Die subjektive Familiarität steht für das Wissensgefühl, welches das Individuum gegenüber dem Stimulus hat (Carr et al., 2017). Das Wissensgefühl gegenüber einem Stimulus wird durch das konzeptuelle und visuelle Gedächtnis beeinflusst. Das visuelle Gedächtnis kann durch semantisches Wissen verstärkt werden. Die Autoren haben dabei festgestellt, dass individuelle Gesichter besser in Erinnerung bleiben, wenn den Gesichtern Namen zugeordnet worden sind. Dies ist als Evidenz dafür zu sehen, dass das konzeptuelle Gedächtnis das visuelle Gedächtnis verstärkt (Carr et al., 2017). Mit Bezug zur Kategorisierungstheorie lassen sich diese Ergebnisse entsprechend einordnen. Ein hohes Subkategoriewissen aufgrund hoher Familiarität mit den Attributen eines Stimulus führt dazu, dass dieser Stimulus nicht dominierend durch die Referenz zu hierarchisch übergeordneten Kategorien, wie der Basiskategorie, beurteilt wird. Die Ergebnisse von Carr et al. (2017) sprechen dafür, dass die Kategorisierung bei hoher Familiarität auf der entsprechenden Subkategorie erfolgt. Die entsprechende Kategorisierung nimmt Einfluss auf das Familiaritätsempfinden und damit den Effekt, welche die Typikalität eines Stimulus auf die Fluency und infolgedessen auf das ästhetische Urteil hat.

## 2.3. Rolle der Kategorisierung für das Produktdesign

Die Kategorisierung und die damit verbundene Processing Fluency spielen bei der visuellen Verarbeitung und ästhetischen Beurteilung von Produkten eine wichtige Rolle zu (Heitmann et al., 2020; Liu et al., 2017; Talke et al., 2017). Die Kategorisierung eines Produktes erfolgt anhand der wahrgenommen Ähnlichkeit zu bekannten Produktkategorien und ihren Subkategorien (Bloch, 1995; Talke et al., 2017). Im Produktkontext ist eine Kategorie nach Loken, Barsalou und Joiner (2008) als ein Set von Produkten, die aus Sicht eines Individuums ähnlichkeitsbasiert zusammengehörig erscheinen definiert. Jeder Kategorie ist ein mentaler Prototyp mit Informationen zu Produkten und ihren Features

hinterlegt, welches über vergangene Erfahrungen angereichert und im Gehirn abgespeichert wurde. Im Zuge der Kategorisierung eines Produktes wird auf das Kategoriewissen zurückgegriffen, um das Produkt einzuordnen, zu verstehen und zu beurteilen (Loken et al., 2008).

Im Produktkontext kommen bei der visuellen Verarbeitung und Beurteilung nach Talke et al. (2017) drei Referenzkategorien besondere Relevanz zu: der Segmentkategorie, der Markenkategorie und der Produktserienkategorie (als Unterart der Markenkategorie). Die Segmentkategorie umfasst Produkte des gleichen Segments. Die Markenkategorie umfasst Produkte des Markenportfolios des beobachteten Produktes. Die Produktserienkategorie bezeichnet die Produkte der konkreten Modelllinie der Marke mit Schwerpunkt auf das Vorgängermodell (Talke et al., 2017). In einem Szenario, in welchem das Apple iPhone 13 Pro betrachtet wird, können die Referenzkategorien demnach folgendermaßen beschrieben werden: die Segmentkategorie umfasst Premium Smartphones, die Markenkategorie das Produktportfolio von Apple und die Produktserienkategorie die Apple iPhone Serie. Die Erwartungshaltung des Betrachters und die darauffolgende Beurteilung des Zielproduktes wird durch den mentalen Prototyp der Kategorie beeinflusst. Dabei variiert der Grad der Detailtiefe des mentalen Prototyps zwischen den Kategorien. Während die Informationen zur Segmentkategorie am abstraktesten hinterlegt sind, nimmt die Detailtiefe der mentalen Repräsentation für die Marken- und Produktserienkategorie zu (Talke et al., 2017). Die Segmentkategorie bildet das gesamte Segment ab und beinhaltet die meisten Mitglieder relativ zu den anderen beiden Kategorien. Die typischen Attribute eines Premium Smartphones, die alle Mitglieder gemeinsam haben, werden mental als visueller Durchschnitt im Prototyp abgebildet. Der mentale Prototyp der Markenkategorie bildet markencharakteristische Attribute ab und verfügt damit über eine höhere Detailtiefe. Die Produktserienkategorie verfügt über einen mentalen Prototyp mit modellspezifischen Attributen, welcher über die höchste Detailtiefe verfügt (Talke et al., 2017). Aufgrund der unterschiedlichen Detailtiefe der mentalen Prototypen fällt die ästhetische Beurteilung eines neuen Produktes abhängig von der Kategorie unterschiedlich aus. Laut Talke et al. (2017) wird von Konsumenten aus Sicht der Segmentkategorie eine größere Veränderung und aus Sicht der Marken- und Produktserienkategorie eine moderate Veränderung des Produktdesigns bevorzugt. Die Erklärung hierfür liegt in der Processing Fluency begründet. Die wahrgenommene Neuheit des Produktes hängt von der mentalen Referenzkategorie ab. Das Maß der Neuheit des Produktes wird Talke et al. (2017) zur Folge anhand der visuellen Abweichung des Produktes zum mentalen Prototyp der Referenzkategorie festgestellt. Die Abweichung selbst ist mit einer verringerten Fluency verbunden. Eine visuelle Abweichung zum ungenauen Prototyp der Segmentkategorie fällt erst deutlich auf, wenn die Abweichung stark ausfällt. Der Stimulus muss nämlich stärker atypisch aussehen, damit ein Unterschied im Abgleich bemerkt wird. Aufgrund der höheren Detailtiefe des mentalen Prototyps der Marken- und Produktserienkategorie

wird eine weniger starke visuelle Abweichung des Stimulus stärker wahrgenommen. Die Typikalitätswahrnehmung abhängig von der Kategorie beeinflusst deshalb die visuelle Verarbeitung und Beurteilung von neuen Produkten (Talke et al., 2017).

2.4. Die Marke als Familiaritätsmoderator

Heitmann et al. (2020) haben die Gewichtung der Markenkategorie in der Beurteilung des Produktdesigns erforscht. Dabei wird die mentale Gewichtung der Markenkategorie den Autoren zufolge vom Markenwert beeinflusst. Der Wert einer Marke lässt sich nach Datta, Ailawadi und van Heerde (2017) aus zwei Perspektiven bemessen. Die aus der Konsumentensicht genannte Consumer-Based Brand Equity (CBBE) oder die aus der Absatzsicht genannte Sales-Based Brand Equity (SBBE). Das CBBE definiert den Markenwert aus Perspektive der Gedanken und Gefühle, die der Konsument gegenüber der Marke hat. Das SBBE hingegen definiert den Markenwert anhand des Absatzes oder des Marktanteils der Produkte (Datta et al., 2017). Im Kontext der visuellen Verarbeitung ist das CBBE entscheidend (Heitmann et al., 2020). Keller (1993) definiert CBBE als „den differentielle Effekt des Markenwissens auf die Reaktion der Verbraucher auf die Vermarktung der Marke" (Keller, 1993, S.2). Ein hohes CBBE liegt vor, wenn der Kunde familiär mit der Marke ist und positive, starke und einzigartige mentale Assoziationen gegenüber der Marke bilden kann (Keller, 1993). Aufgrund dessen wird eine Marketingaktivität unterschiedlich in Abhängigkeit des konsumentenbasierten Markenwertes wahrgenommen und beurteilt. Das Markenwissen des Konsumenten setzt sich wiederum aus der Markenwahrnehmung und dem Markenimage zusammen. Die Markenwahrnehmung steht in Verbindung mit der Erinnerungs- und Wiedererkennungsfähigkeit des Betrachters. Das Markenimage ist repräsentiert durch ein Set von mentalen Assoziationen gegenüber der Marke (Keller, 1993). Das assoziative Netzwerk des Gedächtnisses wird durch ein Set von Knotenpunkten abgebildet, die miteinander verbunden sind. Die Knoten beinhalten gespeicherte Informationen, welche in unterschiedlicher Stärke assoziativ in Verbindung zueinanderstehen. Die Stärke der Assoziationen entscheidet, welche Informationen aus dem Gedächtnis abgerufen werden, wenn externe Informationen kodiert werden oder interne Informationen abgerufen werden (Keller, 1993). Das Markenwissen als mentales Konstrukt kann im assoziativen Netzwerk des Gedächtnisses modelliert werden. Dabei besetzt die Marke einen Knoten im Gedächtnis, welcher in unterschiedlicher Stärke assoziativ mit anderen Knoten im Gedächtnis verbunden ist. Eine starke Marke, das heißt eine Marke mit einem hohem CBBE, ruft eine höhere Zahl von Knoten mit Informationen auf, die mit der Marke in Verbindung stehen (Keller, 1993).

Heitmann et al. (2020) zeigen in ihre Studie, dass das CBBE einen differentiellen Effekt auf die Wahrnehmung des Produktdesigns hat. Die Autoren haben festgestellt, dass Produkte von Marken mit einem hohen CBBE den Konsumenten ästhetisch weniger gefallen können, wenn sie prototypisch zum gesamten Produktsegment sind. Heitmann et al. (2020) postulieren, dass eine Marke mit einem hohen CBBE eine hohe Familiarität mit der Marke reflektiert. Die Wirkung der Familiarität in der mentalen Verarbeitung und ästhetischen Beurteilung eines Produktes gleicht dabei nach Heitmann et al. (2020) dem von menschlichen Gesichtern in der Studie von Carr et al. (2017). Die Marke eines Produktes nimmt Einfluss auf das konzeptuelle Gedächtnis des Betrachters, welches das visuelle Gedächtnis verstärkt. Hiervon ist in Konsequenz der Kategorisierungsprozess, die subjektive Fluency Erfahrung und die Beurteilung des ästhetischen Gefallens eines Produktes betroffen. Die Autoren definieren zwei zentrale Typikalitäten, die in der visuellen Verarbeitung von Produkten Einfluss nehmen: Segmenttypikalität und Markentypikalität. Die Nähe des betrachteten Stimulus zu den mentalen Prototypen der Segment- oder Markenkategorie entscheidet über den Grad seiner Segment- oder Markentypikalität. Konsistenzen, signalisiert durch ein steigendes Gefühl von Fluency, zwischen dem mentalen Prototyp der Kategorie und der Observation führen zu ästhetischem Gefallen. Analog verringern Inkonsistenzen im Abgleich zwischen dem mentalen Prototyp und dem Stimulus die Fluency und damit das ästhetische Gefallen (Heitmann et al., 2020). Eine starke Marke begünstigt nach Heitmann et al. (2020) das Vorhandensein von starken Assoziationen im Gedächtnis, welche zu einer höheren Detailtiefe des mentalen Prototyps der Markenkategorie und damit zu konkreteren visuellen Erwartungen führen. Die visuellen Erwartungen werden dabei durch ein hohes CBBE in ihrer Genauigkeit verstärkt, wenn die Marke in der Vergangenheit eine charakteristische, markentypische Designsprache entwickelt hat. Die mentale Markenkategorie erhält in diesem Fall eine höhere Relevanz in der ästhetischen Beurteilung eines Produktes. Ein ähnlichkeitsbasierter Fit zwischen dem Stimulus und dem mentalen Prototyp der Markenkategorie, signalisiert durch eine hohe Markentypikalität, führt im Gedächtnis des Betrachters zu einer erfolgreichen Kategorisierung ohne Verwirrung. Der Ablauf dieses Prozesses wird als fluent empfunden, damit positiv assoziiert und mündet letztlich in ästhetischem Gefallen für das Objekt (Heitmann et al., 2020). Bei hoher Segmenttypikaliät des Produktes ist allerdings Gegenteiliges der Fall. Die genaue mentale Repräsentation deckt sich nicht mit dem Produkt, wenn es sehr typisch für das Segment, aber wenig typisch für die Marke aussieht. Die Folge ist eine schwierigere Kategorisierung im visuellen Verarbeitungsprozess des Betrachters, welche Verwirrung stiften kann. Für schwache Marken, Marken mit einem niedrigen CBBE, nimmt die Markenkategorie nämlich eine geringere Relevanz in der ästhetischen Beurteilung ein. Aufgrund des geringeren Markenwissens sind weniger konzeptuelle Informationen im Gedächtnis vorhanden, die miteinander in Bezug auf die Marke verknüpft sind. Die Folge ist, dass das visuelle Gedächtnis für Produkte von schwachen Marken nicht ausreichend gefestigt wird. Die Segmentkategorie erhält eine höhere Relevanz in der ästhetischen Beurteilung des Produktes. Ein Produkt einer schwächeren Marke mit einem hohen Fit zum mentalen Prototyp der Segmentkategorie, durch eine hohe Segmenttypikalität, führt zu einer

höheren Fluency, positivem Affekt und hierdurch zu ästhetischem Gefallen (Heitmann et al., 2020). Auf diesen Ergebnissen basierend ist Heitmann et al. (2020) zur Folge ästhetisches Gefallen eine Funktion aus der visuellen Typikalität eines Objektes und den Kategorisierungsstrukturen im Gedächtnis.

## 2.5. Proportionsveränderung als Typikalitätsveränderung

In den Unterkapiteln zuvor wurde erläutert, wie die Kategorisierung von Objekten erfolgt und inwiefern die unterschiedliche Familiarität mit den Objekten die Typikalitätswahrnehmung der Objekte beeinflusst. Produkte starker Marken werden bei ihrer Beurteilung mit einem mentalen Prototyp verglichen, welcher über eine höhere Detailgenauigkeit verfügt. Hierdurch ergeben sich Potentiale für schwächere Typikalitätsveränderungen, die ausreichend hohe Designneuheit suggerieren und gleichzeitig ästhetisch präferiert werden könnten. Die Proportionsveränderung als Typikalitätsveränderung könnte sich hierfür eignen. Meyers-Levy und Tybout (1989) demonstrierten in ihren Studien, dass eine moderate Inkongruenz zwischen einem Produkt und der assoziierten Kategorie die Verarbeitung stimuliert und eine positive Evaluation des Produktes hervorruft. Eine vollkommene Typikalität oder Atypikalität des Produktes verglichen zur Referenzkategorie wirkte sich Meyers-Levy und Tybout (1989) zur Folge weniger positiv auf die Evaluation aus. Den Autoren zur Folge wirkt sich eine zumutbare Auseinandersetzung mit dem Produkt, induziert durch die moderate Inkongruenz, positiv auf die Evaluation aus, weil diese Inkongruenz unter Verwendung der Kognition des Konsumenten sich erfolgreich auflösen lässt. Derweil überfordert eine starke Inkongruenz und unterfordert eine starke Kongruenz den Konsumenten (Meyers-Levy & Tybout, 1989). Nach Berlyne (1970) erwirkt ein mittleres Arousal Potential (Erregungspotential), ausgelöst durch ein Maß an Neuheit welches weiterhin familiär ausdrückt aber auch reizvoll erscheint, ein optimales Maß an positivem Affekt.

Die Wirkung der Proportionsveränderung hat ihre theoretische Basis in der Erzeugung von moderater Inkongruenz. Dechêne, Stahl, Hansen und Wänke (2009) zeigen, dass ein Stimulus von der mentalen Repräsentation abweichen muss, damit Fluency Interesse beim Betrachter erwirkt. Landwehr et al. (2013) haben festgestellt, dass atypische Fahrzeugdesigns gegenüber typischen Fahrzeugdesigns bevorzugt werden, wenn der Betrachter dem atypischen Design mehrfach begegnet. Die Autoren haben dabei Atypikalität in der Form der Abweichung von mehreren Designmerkmalen vom visuellen Prototyp des Segments untersucht. Es ließ sich experimentell feststellen, dass das ästhetische Gefallen für atypische Designs über mehrfache Expositionen hinweg ansteigt und für typische Designs fällt. Graf und Landwehr (2015) erklären die ästhetische Präferenz für moderate Atypikalität im Einklang mit der Processing Fluency Theorie. Der mentale Prototyp bestimmt die Fluency Erwartung des Betrachters. Sofern das Design des Stimulus' vom mentalen Prototyp abweicht, weist der Stimulus verglichen zum mentalen Prototyp Inkonsistenzen auf. Die empfundene Inkonsistenz

steht für die Differenz zwischen der Verarbeitungserwartung und der Verarbeitungseffizienz und wird als Disfluency bezeichnet. Die Disfluency wird vor allem durch die Perceptual Fluency ausgelöst (Graf & Landwehr, 2015). Perceptual Fluency bezeichnet die „Einfachheit der Identifikation der physischen Identität eines Stimulus" (Reber et al., 2004, S. 366). Ein moderates Level an Disfluency birgt das Potential, unter Hinzunahme von konzeptuellem Wissen abgebaut werden zu können. Dies erfordert allerdings eine aktive Auseinandersetzung des Betrachters mit dem Stimulus. Voraussetzung hierfür ist der kontrollierte Verarbeitungsmodus, welcher bei ausreichend hoher Motivation und kognitiver Kapazität aktiviert wird. Der Erfolg des Disfluency Reduktionsprozesses wird durch die Conceptual Fluency beeinflusst (Graf & Landwehr, 2015). Conceptual Fluency bezeichnet dabei die Einfachheit mentaler Operationen, die sich mit der Bedeutung des Stimulus, relativ zu vorhandenen Wissensstrukturen, befassen (Reber et al., 2004). Sofern der Disfluency Reduktionsprozess erfolgreich vonstatten geht, entsteht ein Gefühl von Fluency, welches hedonisch markiert ist und mit positivem Affekt verbunden ist. In Konsequenz führt eine erfolgreiche Disfluency Reduktion zur ästhetischen Präferenz für das Objekt, welches die Autoren als ästhetisches Interesse bezeichnen. Sofern die Disfluency Reduktion nicht erfolgreich gelingt oder sich kein Potential für eine Disfluency Reduktion ergibt, kann Verwirrung oder Langeweile entstehen (Graf & Landwehr, 2015).

Das Maß an empfundener Disfluency hängt von der mentalen Kategorie und ihrem Prototyp ab, gegen den ein Produkt verglichen wird (Heitmann et al., 2020). Veränderungen des Produktdesigns werden abhängig von der Referenzkategorie dadurch subjektiv als stärker oder schwächer empfunden. Die Proportionsveränderung wird in dieser Forschungsarbeit als ein Mittel betrachtet, um den Eindruck einer mittleren Designneuheit zu erwirken. Die Veränderung von Proportion wird dabei als eine Form der Typikalitätsveränderung betrachtet. Anders als bei der Untersuchung von Landwehr et al. (2013) wird durch die Proportionsveränderung keine globale Atypikalität durch die gesamthafte Verziehung des Designs induziert. Die Proportionsveränderung ist als gezielte Typikalitätsveränderung von bestimmten Designelementen innerhalb eines Produktes zu verstehen, welche das grundständige typische Gesamtdesign des Produktes beibehält. Voraussetzung für die positive Wirkungskraft der Proportionsveränderung ist, dass sie als solche visuell wahrgenommen wird und Interpretationskraft birgt. Die Bedingung hierfür wird durch eine starke Marke, eine Marke mit einem hohen CBBE, beeinflusst. Die Markenstärke bestärkt die Speicherung der markentypischen Designsprache im Gedächtnis (Heitmann et al., 2020). Durch die Detailtiefe des mentalen Prototyps einer starken Marke fallen kleinere Veränderungen visuell stärker auf. Die Inkonsistenz zwischen dem assoziativ stärksten mentalen Prototyp und dem Stimulus verursacht Disfluency. Bei einer schwachen Marke ist davon auszugehen, dass nur geringes Markenwissen vorhanden ist. Das fehlende Markenwissen führt dazu, dass die Speicherung etwaiger markentypischer Designcharakte-

ristiken nicht unterstützt wird. Hierdurch ist anzunehmen, dass die Markenkategorie eine geringere Rolle in der visuellen Verarbeitung einnimmt. Die visuelle Veränderung durch die Proportionsveränderung fällt weniger auf. Eine Inkonsistenz zwischen dem mentalen Prototyp der Referenzkategorie und dem Stimulus wird schwächer erkannt und verursacht in Konsequenz eine geringere Disfluency. Das Produkt wird nicht als Neuheit im Vergleich zum Vorgängermodell gedeutet und kann aufgrund der geringen Disfluency keine Neugier auslösen. Die Proportionsveränderung eines Produktes einer starken Marke lässt allerdings zwei Dinge zu. Erstens, das Gefühl, ein neues Produkt zu betrachten aufgrund eines entsprechenden Arousal Potentials induziert durch eine mittlere Disfluency. Zweitens, den Abbau der Disfluency mittels des Transfers von kategorialem Markenwissen bei aktiver Auseinandersetzung mit dem Stimulus. Die Proportionsveränderung erscheint aus der Markensicht betrachtet als sinnvoll. Und gleichzeitig erhält sie visuell die markenspezifische Typikalität, die Vertrautheit beim Betrachter auslöst. Der Disfluency Abbauprozess wird allerdings nicht bei einmaliger, kurzer Betrachtung abgeschlossen sein, sondern benötigt eine längere Auseinandersetzung mit dem Stimulus mittels kontrollierter Verarbeitung (Graf & Landwehr, 2015), um den vollständigen Transfer des kategorialen Markenwissens zu ermöglichen.

Anhand der Proportionsvergrößerung der Kamera vom Apple iPhone 12 Pro zum Apple iPhone 13 Pro lässt sich das konzeptuelle Modell beispielhaft illustrieren. Die Vergrößerung der Kameraproportionen auf der Smartphonerückseite erzeugt bei einmaliger Betrachtung eine deutliche Disfluency, weil aufgrund der Proportionsvergrößerung im Abgleich mit dem detailreichen mentalen Prototyp die Inkonsistenz deutlich bemerkt wird. Die erzeugte Disfluency wirkt sich zunächst negativ aus und sollte deshalb, verglichen zum Vorgängermodell, zu einer Verringerung des ästhetischen Gefallens führen. Das konzeptuelle Markenwissen hilft allerdings, die Proportionsveränderung einzuordnen. Die Marke Apple ist bekannt für die Innovationskraft und die ästhetische Simplizität ihrer Produkte (Segall, 2016). Entsprechende mentale Assoziationen unterstützen dabei, die Vergrößerung der Kamera für den Betrachter zu erklären. Dieser setzt sich mit dem Produkt auseinander und kann die Disfluency getrieben durch die Conceptual Fluency abbauen. Dieser erfolgreiche Prozess des Disfluency Abbaus auf Seiten des Betrachters verursacht wiederum positiven Affekt. Infolgedessen sollte die Typikalitätsveränderung induziert durch die Proportionsvergrößerung dazu führen, dass das ästhetische Gefallen für das neue Produkt im Vergleich zum Vorgängermodell zunimmt. Dies ist allerdings erst der Fall, wenn eine aktive Auseinandersetzung mit dem Stimulus mittels der kontrollierten Verarbeitung erfolgt, um etwaige Disfluency vollständig abzubauen (Graf & Landwehr, 2015).

### 2.5.1. Forschungshypothesen für das Experiment

Auf Basis des hergeleiteten konzeptuellen Frameworks (siehe Abbildung 1) auf Grundlage der Unterkapitel werden im Folgenden Forschungshypothesen formuliert, die in der Studie in Kapitel 3 untersucht werden. Die Hypothesen zielen darauf ab, die theoretische Wirkungsweise der Proportionsveränderung im Kontext der Markenstärke empirisch zu untersuchen.

Berücksichtigend einer starken Mediation durch die Processing Fluency wird postuliert, dass der totale Effekt der Proportionsvergrößerung auf das ästhetische Gefallen sich negativ auswirkt. Das konzeptuelle Framework sieht für einen positiven Effekt der Proportionsveränderung den Prozess der Disfluency Reduktion vor, welche eine aktive Auseinandersetzung des Betrachters mit dem Stimulus fordert. Es wird angenommen, dass bei einer einfachen Exposition zum Stimulus die Disfluency Reduktion nicht abgeschlossen werden kann und deshalb der Effekt der erzeugten Disfluency überwiegt. Hieraus folgt:

> H1: Die Proportionsveränderung hat einen negativen Effekt auf das ästhetische Gefallen.

Proportionsveränderungen stellen eine gezielte Typikalitätsveränderung eines Stimulus dar, welche gegen die Verarbeitungserwartung des Betrachters läuft. Die Inkonsistenz im Abgleich zwischen dem proportionsveränderten Stimulus und dem mentalen Prototyp führt dazu, dass Verarbeitungseffizienz geringer im Vergleich zur Verarbeitungserwartung ausfällt und dadurch Disfluency erzeugt. Hieraus folgt:

> H2: Die Proportionsveränderung hat einen negativen Effekt auf die Processing Fluency.

Die Differenz zwischen der Verarbeitungserwartung und der Verarbeitungseffizienz wird durch die Markenstärke beeinflusst. Bei einer starken Marke ist der mentale Prototyp konkreter, woraus sich genauere visuelle Erwartungen ergeben. Die visuelle Abweichung des Stimulus durch die Proportionsveränderung wird stärker erkannt und verringert die Verarbeitungseffizienz relativ zur Erwartung. Hieraus ist zu erwarten, dass der negative Effekt der Proportionsveränderung auf die Processing Fluency sich verstärkt, wenn diese Beziehung durch eine starke Marke moderiert wird. Hieraus ergibt sich:

> H2a: Der negative Effekt der Proportionsveränderung auf die Processing Fluency wird durch eine starke Marke verstärkt.

Processing Fluency wirkt sich positiv auf das ästhetische Gefallen aus, sofern der wahre Grund für die fluente Erfahrung für den Betrachter nicht bekannt ist (Reber et al., 2004) oder die aktive Einordnung des Stimulus erfolgreich verläuft (Graf & Landwehr, 2015). Hieraus ergibt sich folgende Hypothese:

> H3: Processing Fluency hat einen positiven Effekt auf das ästhetische Gefallen.

Bei einer starken Marke ist zu erwarten, dass konkreteres Wissen über perzeptuelle und funktionelle Attribute des Produktes vorhanden ist. Dieses Wissen kann dem Abbau von Disfluency, gleichbedeutend mit der Verstärkung der Fluency Erfahrung, dienen. Hieraus lässt sich ableiten:
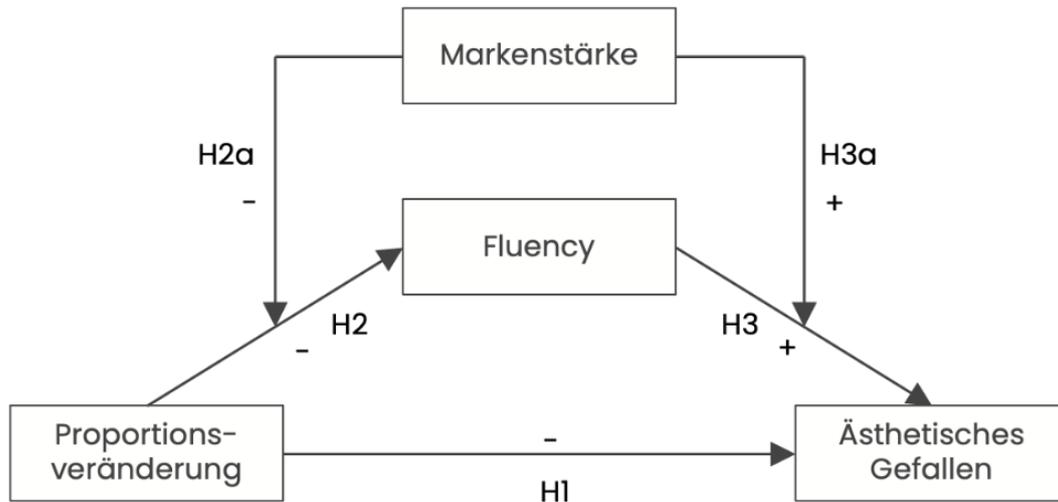
**Abbildung 1:** Konzeptuelle Wirkungsweise der Proportionsveränderung mit Notation der Forschungshypothesen und der erwarteten Effektrichtung an den Pfeilen.

H3a: Der positive Effekt der Processing Fluency auf das ästhetische Gefallen wird durch eine starke Marke verstärkt.

Eine moderierte Mediation des Einflusses der Proportionsveränderung auf das ästhetische Gefallen besteht, wenn:

H4: Der indirekte Effekt der Processing Fluency auf das ästhetische Gefallen ist durch die Markenstärke moderiert, sodass der indirekte Effekt stärker ist, wenn die Marke stark ist.

Disfluency steht zunächst in einem negativen Zusammenhang mit ästhetischem Gefallen. Allerdings kann Disfluency die Basis für Disfluency Reduktion sein und damit das Potenzial für die mit der Zeit steigende Zuneigung gegenüber dem neuen Design darstellen. Dadurch, dass sich die zeitliche Dimension für die aktive Auseinandersetzung mit dem Stimulus im vorgesehenen Experiment nicht darstellen lässt, wird das ästhetische Interesse als Indikator für ein Disfluency Reduktionspotential verwendet. Es wird davon ausgegangen, dass das ästhetische Interesse bei einem proportionsveränderten Produkt steigt, wenn es sich um ein Produkt einer starken Marke handelt. Das ästhetische Interesse ist als Andeutung dafür zu interpretieren, dass positives Potenzial für die Disfluency Reduktion vorhanden ist. Hieraus folgt:

H5: Die Proportionsveränderung hat einen positiven Effekt auf das ästhetische Interesse, wenn die Marke stark ist.

## 3. Studie

In einem Onlineexperiment wurden die Forschungshypothesen aus dem vorangegangenen Kapitel getestet. Als Stimuli wurden Smartphones verwendet. Der Smartphonemarkt wurde aus drei Gründen gewählt. Erstens, in der bisherigen Fluency Forschung zu Produktdesign wurde der Fahrzeugmarkt intensiv untersucht (z.B. Landwehr et al., 2011; Landwehr et al., 2013; Rubera, 2015). Aus diesem Grund empfiehlt die Forschung, andere Produkte als Stimuli zu verwenden. Smartphones stellen ebenfalls ein physisches Gut dar, welches täglich genutzt wird und dessen Design Relevanz in der Kaufentscheidung einnimmt (Chitturi et al., 2008). Zweitens, aufgrund der Reifung des Smartphonemarktes (The Economist, 2019) seit der Vorstellung des Apple iPhone in Jahr 2007 (Schuldt, 2012) kommt der Ästhetik des Produktdesigns als Differenzierungsmerkmal gegenüber Wettbewerbern eine bedeutendere Rolle zu (Bloch, 1995; Karjalainen & Snelders, 2010). Drittens, die Designanpassungsmöglichkeiten sind für ein Smartphone, verglichen zu beispielsweise einem Auto, aufgrund der kleineren Fläche geringer. Beispielsweise lässt sich die Fülle an Designkomplexität, welche sich auf der Karosserie eines Autos kreieren lässt (Landwehr et al., 2011), nicht auf das Smartphone übertragen. Eine Proportionsveränderung auf einem Smartphone nimmt aus dieser Perspektive heraus eine höhere Relevanz ein.

### 3.1. Methode

Ein 2 (Proportionsveränderung: keine vs. niedrige Vergrößerung) × 2 (Markenstärke: schwach vs. stark) Between-Subjects Design wurde für das Experiment verwendet. Dieses wurde auf der Umfragesoftware Unipark angelegt. Auf Basis des Brand Asset Valuators der BAV Group (2021), welcher das CBBE von Marken misst und des Statista Global Consumer Survey (2021), welche die Verbreitung von Smartphones nach Marken in Deutschland erhoben hat, wurde der Faktor Markenstärke manipuliert. Der Brand Asset Valuator diente als Grundlage für die Bemessung des Markenwertes aus Perspektive des CBBE im Forschungspapier von Heitmann et al. (2020). Laut dem Brand Asset Valuator weist die Marke Apple ein hohes CBBE durch Bestwerte in den Dimensionen Mar-

kenstärke und Markenformat auf (BAV Group, 2021). Gleichzeitig gehören Apple Smartphones zu den meistgenutzten Smartphones in Deutschland (Statista Global Consumer Survey, 2021). Aus diesem Grund wurde die Marke Apple für die Manipulation der starken Marke gewählt. Die Marke Huawei weist laut dem Brand Asset Valuator ein geringeres CBBE aufgrund des geringen Markenformats und der vergleichsweise niedrigeren Markenstärke auf (BAV Group, 2021). Des Weiteren ist die Verbreitung von Huawei Smartphones im deutschen Markt deutlich niedriger im Vergleich zur Verbreitung von Apple Smartphones (Statista Global Consumer Survey, 2021). Aus diesem Grund wurde die Marke Huawei für die Manipulation der schwachen Marke verwendet. Basierend auf der Manipulation gemäß des Markenwerts wird von einer starken Marke (Apple) oder schwachen Marke (Huawei) gesprochen.

Die Manipulation der Proportion wurde an den aktuellen Flaggschiffmodellen der jeweiligen Marken als Stimuli vollzogen. Bei der Marke Apple handelte es sich um das im September 2021 vorgestellte Apple iPhone 13 Pro (Apple Inc., 2021). Für die Marke Huawei wurde das im Juli 2021 vorgestellte Huawei P50 Pro verwendet (Kluczniok, 2022). Die Abbildungen 3 und 4 im Anhang zeigen jeweils die Designentwicklung der beiden Produktserien seit 2017 bis hin zu den aktuellen Modellen. In den Abbildungen wird deutlich, dass die Apple iPhone Serie im Gegensatz zur Huawei P Serie über ein kontinuierliches, markentypisches Design verfügt. Für die Produktästhetik von Smartphones wurde angenommen, dass das Design der Smartphonerückseite eine wichtige Rolle spielt. Aufgrund des Displays, welches (nahezu) vollständig die gesamte Fläche der Vorderseite einnimmt, ist das ästhetische Differenzierungspotential auf der Vorderseite beschränkt. Auf der Rückseite des Smartphones gibt es allerdings ausreichend Spielraum, um das Gerät durch das Design von Wettbewerberprodukten zu differenzieren. Ein prägendes Element auf der Rückseite des Smartphones stellt die Kamera dar. Neben der Farbgebung, der Textur oder den verwendeten Materialien der Rückseite nimmt die Struktur und Proportion der Kamera maßgeblichen Einfluss auf das Design der Smartphonerückseite. Aufgrund dessen wurde die Proportion der Kamera für den Faktor Proportionsveränderung manipuliert. Unter Nutzung der Bildbearbeitungssoftware Adobe Photoshop wurden die Maße der Kamera des Apple iPhone 13 Pro und des Huawei P50 Pro in der proportionsveränderten Bedingung um 15% Prozent vergrößert. In einer Pilotstudie mit Testpersonen hatte sich gezeigt, dass eine fünfzehnprozentige Vergrößerung der Kamera sich bemerkbar macht und als unterschiedlich gegenüber dem Original wahrgenommen wird. Gleichzeitig wurde keine übermäßige Proportionsveränderung vollzogen, um die Veränderung angemessen wirken zu lassen. In der proportionsunveränderten Bedingung wurden keine Veränderungen an der Proportion der Kamera an den beiden Stimuli vollzogen. Neben den aktuellen Smartphonemodellen der beiden Marken wurden im Rahmen der Studie die jeweiligen Vorgänger, das Apple iPhone 12 Pro (Apple Inc., 2020) und das Huawei P40 Pro (Fischer, 2020), genutzt. Marken und weitere Schriftzüge

auf den Stimuli wurden mittels der Bildbearbeitungssoftware Adobe Photoshop entfernt. In einer Pilotstudie mit Testpersonen hatte sich gezeigt, dass Schriftzüge die Aufmerksamkeit der Betrachter auf diese lenken, obgleich sie keine Rolle für den Zweck der Studie spielen. Des Weiteren wurden die Modelle farblich angeglichen (Farbe weiß), um Konfundierung der Ergebnisse durch unterschiedliche Farben der Smartphones auszuschließen. Die gezeigten Bilder der Smartphones hatten alle die gleiche Höhe von 540 Pixel und eine Breite zwischen 265 und 275 Pixel.

Die Studie war darauf ausgelegt in weniger als fünf Minuten bearbeitet werden zu können. Die Teilnahme an der Onlinestudie konnte am Computer oder auf mobilen Endgeräten erfolgen, wobei in der Instruktion die Verwendung eines Computers oder eines Laptops empfohlen wurde. Nach einem kurzen Einleitungstext, der intendierten Datenverarbeitung und den Datenschutzbedingungen wurde die Zustimmung der Probanden für die Teilnahme eingefordert. Nach erfolgter Zustimmung wurden die Probanden mittels eines kurzen Textes in die Kaufentscheidungssituation eines Smartphones versetzt. Das Szenarium der Kaufentscheidung sollte die aktive Auseinandersetzung der Probanden mit den Stimuli erhöhen (Talke et al., 2017). Anschließend wurde ihnen das Logo derjenigen Marke gezeigt, der sie zugeteilt worden sind (siehe Abbildung 5 im Anhang). Hierauf folgend wurden die Probanden gebeten, sich das aktuelle Modell und das Vorgängermodell der Flaggschiffserie der Marke zu betrachten. Es wurden Bilder der beiden Smartphones für 30 Sekunden eingeblendet, entweder das Apple iPhone 12 Pro gemeinsam mit dem Apple iPhone 13 Pro (proportionsunverändert) oder das Huawei P40 Pro gemeinsam mit dem Huawei P50 Pro (proportionsunverändert) auf dem Computer nebeneinander (sofern die Probanden auf ihren Smartphones teilnahmen untereinander) eingeblendet (siehe Abbildung 6 und 7 im Anhang). Diese Phase diente dazu, die Auseinandersetzung der Probanden mit der Produktserie zu initiieren und vorhandene mentale Assoziationen gegenüber der Marke und des Markendesigns zu wecken. Nach Ablauf der Betrachtungszeit wurden die Probanden automatisch auf die Folgeseite weitergeleitet. Diese bereitete die Probanden auf das Szenario vor, innerhalb welchem sie die proportionsveränderte- oder unveränderte Variante betrachten sollten. Das Szenario besagte, dass die Probanden das Nachfolgermodell der zuvor gezeigten Produktserie gezeigt bekämen, welches der Öffentlichkeit noch nicht präsentiert worden sei. Den Probanden wurde erklärt, dass das Bild des Nachfolgermodells aus einem vertrauenswürdigen Leak entstamme und deshalb mit hoher Sicherheit dem tatsächlichen Nachfolgermodell entspräche.

Entsprechend der zugeteilten Bedingung wurde den Probanden folglich ein Bild der Smartphonerückseite der entsprechenden Marke, entweder mit der proportionsveränderten oder -unveränderten Kamera, gezeigt (siehe Abbildung 6). Nach 20 Sekunden Betrachtungsdauer wurden die Probanden automatisch auf die Folgeseite weitergeleitet, auf der die Messung der Manipulation erfolgte. Die Probanden wurden nun gebeten das zuletzt betrachtete Smartphone zu bewerten. Analog zu Graf und Landwehr (2017) wurden

die Probanden gebeten, auf einer visuellen Analogskala, die intern von 1 bis 101 kodiert war, jeweils auf einem Item ihr ästhetisches Gefallen (nicht ansprechend vs. ansprechend), ästhetisches Interesse (uninteressant vs. interessant) und ihre subjektive Fluency Erfahrung (einfach vs. schwer) anzugeben. Die Messung der subjektiven Fluency Erfahrung anhand eines einzigen Items hat sich dabei nach Graf, Mayer und Landwehr (2018) als reliabel erwiesen. Auf der Folgeseite wurden die Variablen Designkonsistenz in Bezug auf die gezeigten Vorgängermodelle und die Markenfamiliarität als Manipulationscheck auf einer 7-Punkte-Skala abgefragt. Abschließend wurden die demografischen Variablen Geschlecht, Alter und Bildungsgrad abgefragt und den Probanden Dank für die Teilnahme ausgesprochen. Probanden, die über das Portal Surveycircle zur Studie gefunden haben, erhielten einen Code für die Teilnahme, mit dem sie auf dem Portal Punkte sammeln konnten.

## 3.2. Ergebnisse

Aus einem Gesamtstichprobensatz von 692 Probanden haben 408 Probanden über den Zeitraum vom 08.12.2021 bis zum 10.01.2022 die Onlinestudie vollständig bearbeitet. Die Probanden wurden über verschiedene digitale Kanäle rekrutiert. Der Link zur Studie wurde auf sozialen Netzwerken geteilt oder an Freunde und Bekannte weitergeleitet. Auf der Umfrageplattform Surveycircle wurde der Link zur Studie veröffentlicht. Des Weiteren wurde der Link zur Studie auf einer universitären Lernplattform via Mitteilung in zwei Lehrveranstaltungen gepostet. Drei Probanden, deren Bearbeitungszeit, vermutlich aufgrund eines technischen Fehlers, mit minus einer Sekunde angegeben wurde, wurden eliminiert. Des Weiteren wurden sieben Probanden, die eine Bearbeitungszeit von mehr als 8 Minuten aufwiesen, aus dem Datensatz eliminiert. Die Elimination liegt in der Annahme begründet, dass mehr als 8 Minuten Bearbeitungszeit den Effekt der eigentlichen Manipulation verfälschen könnten. Der finale Datensatz zur Ergebnisauswertung umfasst 398 Probanden ($M_{Alter}$ = 25, 55% weiblich). 52% der Probanden wurden der starken Marke zugeteilt (siehe Tabelle 1). Die Median Bearbeitungszeit betrug 169 Sekunden. Ein Manipulationscheck des Faktors Markenstärke wurde anhand der Variable Markenfamiliarität durchgeführt. Die Mittelwerte für die beiden Marken, über den Faktor Proportionsveränderung hinweg, unterschieden sich nach dem Welch Zweistichproben t-test signifikant voneinander ($M_{schwach}$ = 4.5 vs. $M_{stark}$ = 6.1, $t(338.79) = -7.99$, $p < .001$), sodass die Familiarität mit Apple signifikant höher ausfiel als für Huawei. Das Ergebnis entspricht der intendierten Manipulation der Markenstärke. Für die Annahme, dass die Markenstärke in Verbindung mit einer höheren Designkonsistenz steht, wurde die Variable Designkonsistenz erhoben. Die Mittelwerte für die beiden Marken, über den Faktor Proportionsveränderung hinweg, unterschieden sich nach dem Welch Zweistichproben t-test signifikant voneinander ($M_{schwach}$ = 3.2 vs. $M_{stark}$ = 6.0, $t(369.69) = -18.12$, $p < .001$). Die Designkonsistenz der Produktserie wurde bei Apple als signifikant höher empfunden.

### 3.2.1. Moderierte Mediation

Die Hypothesen H1 bis H4 wurden im Rahmen einer moderierte Mediationsanalyse getestet. Die Mediation steht für eine kausale Verbindung zwischen der experimentell manipulierten, unabhängigen Variable und der Ergebnisvariable durch einen Mediator (Baron & Kenny, 1986). Die moderierte Mediation bedingt die Mediation, sodass der Mediationsprozess abhängig von einem Moderator ist. Der Mediationsprozess variiert dabei durch den vom Moderator induzierten Kontext (Muller, Judd & Yzerbyt, 2005). Für die Modellierung der moderierten Mediation wurde die Prozedur von Muller et al. (2005) angewandt. Auf Basis des Modells der Autoren wurden drei Regressionsgleichungen geschätzt mit ästhetischem Gefallen als abhängige Variable, Proportionsveränderung als unabhängige Variable, Markenstärke als unabhängige Variable im konzeptuellen Sinne eines Moderators und die subjektive Fluency als Mediator.

$$
\begin{aligned}
\ddot{A}sthetisches\ Gefallen = {} & \beta_{10} + \beta_{11} \\
& * Proportionsver\ddot{a}nderung + \beta_{12} * Markenst\ddot{a}rke \\
& + \beta_{13} * Proportionsver\ddot{a}nderung \\
& * Markenst\ddot{a}rke + \varepsilon_1
\end{aligned} \tag{1}
$$

$$
\begin{aligned}
Fluency = {} & \beta_{20} + \beta_{21} * Proportionsver\ddot{a}nderung \\
& + \beta_{22} * Markenst\ddot{a}rke + \beta_{23} \\
& * Proportionsver\ddot{a}nderung * Markenst\ddot{a}rke + \varepsilon_2
\end{aligned} \tag{2}
$$

$$
\begin{aligned}
\ddot{A}sthetisches\ Gefallen = {} & \beta_{30} + \beta_{31} \\
& * Proportionsver\ddot{a}nderung + \beta_{32} * Markenst\ddot{a}rke \\
& + \beta_{33} * Proportionsver\ddot{a}nderung * Markenst\ddot{a}rke \\
& + \beta_{34} * Fluency + \beta_{35} * Fluency * Markenst\ddot{a}rke + \varepsilon_3
\end{aligned} \tag{3}
$$

$\beta$ gibt den Parameter und $\varepsilon$ die Residuen an. Die beiden Faktoren wurden effektkodiert mit Proportionsveränderung ([-1] = unverändert, [1] = verändert) und Markenstärke ([-1] = schwach, [1] = stark). Für die Analyse wurde die Variable Fluency rückwärtskodiert ([1] = schwer, [101] = einfach) und in der dritten Gleichung mittelswertszentriert. Die Statistiksoftware R wurde für alle Analysen verwendet. Dabei wurden die Pakete „boot" (Canty & Ripley, 2021), „car" (Fox, Weisberg & Price, 2021), „ggplot2" (Wickham, 2016) und „plyr" (Wickham, 2020) sowie der R-Code „Process 4.0" (Hayes, 2021) genutzt. Die Ergebnisse der Regressionsanalyse sind in Tabelle 2 aufgeführt.

Modell (1) testet den totalen Effekt der experimentellen Manipulation der Faktorvariablen Proportionsveränderung und Markenstärke auf das ästhetische Gefallen. Der Haupteffekt der Proportionsveränderung war nicht signifikant ($b_{11}$ = -1.439, $p = .292$). Der Haupteffekt der Markenstärke war signifikant ($b_{12}$ = 4.827, $p < .001$). Die Interaktion aus Proportionsveränderung und Markenstärke war nicht signifikant ($b_{13}$ = -0.798, $p = .559$). Stimuli der starken Marke gefielen besser, unabhängig von der Proportionsveränderung. Auch

**Tabelle 1:** Verteilung der Probanden auf die experimentellen Bedingungen.

| Markenstärke | Proportionsveränderung | |
|---|---|---|
| | unverändert | verändert |
| Huawei (schwach) | 98 | 97 |
| Apple (stark) | 103 | 100 |

wenn die Vorzeichen der Parameter der Proportionsveränderung und des Interaktionsterms negativ sind und damit der theoretischen Vorhersage entsprechen, nehmen sie keinen signifikanten Einfluss auf das ästhetische Gefallen. Der totale Effekt der Proportionsveränderung auf das ästhetische Gefallen ist nicht signifikant. Hypothese H1 wird auf dieser Basis verworfen.

Modell (2) testet, ob die experimentelle Manipulation der Faktorvariablen die subjektive Fluency beeinflusst hat. Dabei hatte die Proportionsveränderung einen signifikanten Effekt auf die Fluency ausgeübt ($b_{21}$ = -2.536, p = .046)[1]. Im Gegensatz hierzu konnte für die Markenstärke kein signifikanter Haupteffekt festgestellt werden ($b_{22}$ = 2.080, p = .102). Der Interaktionseffekt aus Proportionsveränderung und Markenstärke auf die Fluency war signifikant ($b_{23}$ = -2.738, p = .031). Die signifikanten Ergebnisse bestätigen die Annahmen der Hypothesen H2 und H2a. Sowohl der Haupteffekt der Proportionsveränderung als auch der Interaktionseffekt aus Proportionsveränderung und Markenstärke wirken sich negativ auf die Processing Fluency aus, wie in den Hypothesen postuliert. Aus dem signifikanten Interaktionseffekt lässt sich die Moderation des Pfades zwischen der Proportionsveränderung und der Fluency durch die Markenstärke ableiten. Die starke Marke verstärkt den negativen Effekt auf die subjektive Fluency. Mit Blick auf die deskriptiven Statistiken in Tabelle 3 ist jedoch zu erkennen, dass in der Bedingung der schwachen Marke die Fluency sich nicht zwischen den Faktorlevels der Proportionsveränderung unterscheidet. Ein Welsh Zwei-Stichproben t-test zeigt, dass der Unterschied nicht signifikant ist ($M_{unverändert}$ = 64.10 vs. $M_{verändert}$ = 64.51, t(192.97) = −0.110, p = .912). In der Bedingung der starken Marke ist die subjektive Fluency allerdings für die veränderte Variante gegenüber der unveränderten Variante signifikant geringer ($M_{unverändert}$ = 73.74 vs. $M_{verändert}$ = 63.19, t(193.65) = 2.992, p = .003). Die Signifikanz des Haupteffektes der Proportionsveränderung auf die Fluency scheint auf die Bedingung der starken Marke, welcher mehr Probanden als der schwachen Marke zugeteilt wurden, zurückführbar zu sein.

Modell (3) testet den direkten Effekt der Faktorvariablen und den indirekten Effekt vermittelt durch die subjektive Fluency und moderiert durch die Markenstärke auf das ästhetische Gefallen. Wie in Modell (1) war der Effekt der Proporti-

onsveränderung auf das ästhetische Gefallen nicht signifikant ($b_{31}$ = -1.160, p = .396) währenddessen der Effekt der Markenstärke weiterhin signifikant war ($b_{32}$ = 4.503, p = .001). Der Interaktionseffekt aus Proportionsveränderung und Markenstärke auf das ästhetische Gefallen war ebenfalls nicht signifikant ($b_{33}$ = -0.480, p = .726). Der Effekt der Fluency auf das ästhetische Gefallen war signifikant ($b_{34}$ = 0.154, p = .004). Die Interaktion aus Fluency und Markenstärke hatte keinen signifikanten Effekt ausgeübt ($b_{35}$ = -0.041, p = .446). Die subjektive Fluency wirkte sich positiv auf das ästhetische Gefallen aus. Die Hypothese H3 kann auf dieser Basis angenommen werden. Der Fluency Effekt wurde jedoch nicht durch die Markenstärke moderiert worden. Auf dieser Basis wird Hypothese H3a verworfen.[2]

Der konditionale indirekte Effekt ergibt sich aus der folgenden Gleichung:

$$Indirekter\ Effekt_i = (\beta_{21} + \beta_{23} * Markenstärke_i)$$
$$* (\beta_{34} + \beta_{35} * Markenstärke_i)$$

wobei i für die Ausprägung der Markenstärke steht (schwach [-1] und stark [1]).

Die Signifikanz des konditionalen indirekten Effektes wurde durch die Bootstrapping-Methode mit 5000 Stichproben mit Zurücklegen auf einem 95% perzentilbasierten Konfidenzintervall überprüft und mittels des „Process 4.0" R-Codes (Hayes, 2021) ermittelt. Der indirekte Effekt war sowohl im Falle der schwachen Marke nicht signifikant (Indirekter Effekt$_{schwach}$ = 0.039, SE = .394, [-0.73, 0.87]) als auch im Falle der starken Marke nicht signifikant (Indirekter Effekt$_{stark}$ = -0.596, SE = .498, [-1.68, 0.29]). Der Index of Moderated Mediation gibt die Signifikanz der moderierten Mediation nach Hayes (2015) an. Dabei wird Signifikanz der Differenz aus den beiden konditionellen indirekten Effekten getestet (Hayes, 2015). Der Index of Moderation Mediation war nicht signifikant (Index = -0.636, SE = .064, [-1.98, 0.55]). Ein indirekter Effekt auf das ästhetische Gefallen, vermittelt durch die Fluency und moderiert durch die Markenstärke, konnte damit nicht festgestellt werden. Hypothese H4 wird damit verworfen.

Aufgrund der Tatsache, dass Hypothese H3a nicht signifikant war und der Pfad zwischen der Fluency und dem ästhetischen Gefallen nicht durch die Markenstärke moderiert wur-

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[1]Bei der Regressionsanalyse mit dem vollen Probandensatz (n = 408) ist der Haupteffekt der Proportionsveränderung marginal signifikant (b12 = −2.410, p = .054). Die übrigen Parameter aller Modelle unterscheiden sich nicht in ihrer Signifikanz gegenüber der Regressionsanalyse mit dem vollen Probandensatz.

[2]Die Signifikanzen der Parameter aller Modelle wurden ebenfalls durch das gegenüber der Regressionsanalyse robustere Bootstrapping-Verfahren mit 5000 Stichproben mit Zurücklegen auf einem 95% (perzentilbasierten) Konfidenzintervall überprüft. Die Ergebnisse unterscheiden sich in ihrer Signifikanz nicht von der Regressionsanalyse.

**Tabelle 2:** Regressionsoutput der Modelle 1 bis 3. PV, Proportionsveränderung; MS, Markenstärke; F, Fluency.

| | | Abhängige Variablen | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unabhängige Variablen | | Gefallen (Y) | | | | | Fluency (M) | | | | | Gefallen (Y) | | | |
| | | Coef | SE | t | p | | Coef | SE | t | p | | Coef | SE | t | p |
| PV | $b_{11}$ | -1,439 | 1.363 | -1,055 | .292 | $b_{21}$ | -2.536 | 1.268 | -2.000 | .046 | $b_{31}$ | -1.160 | 1.366 | -0.849 | .396 |
| MS | $b_{12}$ | 4,827 | 1.363 | 3,541 | <001 | $b_{22}$ | 2.080 | 1.268 | 1,641 | .102 | $b_{32}$ | 4.503 | 1.356 | 3.320 | .001 |
| PV:MS | $b_{13}$ | -0.798 | 1.363 | -0,585 | .559 | $b_{2s}$ | -2.738 | 1.268 | -2,159 | .031 | $b_{33}$ | -0.480 | 1.366 | -0.351 | .726 |
| F | | | | | | | | | | | $b_{34}$ | 0.154 | 0.054 | 2.869 | .004 |
| MS:F | | | | | | | | | | | $b_{35}$ | -0.041 | 0.054 | -0.763 | .446 |
| Constant | $b_{10}$ | 56.859 | 1.363 | 41.711 | <001 | $b_{20}$ | -0.081 | 1.268 | -0,064 | .949 | $b_{30}$ | 56.957 | 1.356 | 41.999 | <001 |
| Observations | | 398 | | | | | 398 | | | | | 398 | | | |
| R2 | | 0.035 | | | | | 0.029 | | | | | 0.056 | | | |
| Adjusted R2 | | 0.027 | | | | | 0.021 | | | | | 0.044 | | | |
| Residual RE | | 27.188(df = 394) | | | | | 25.290(df = 394) | | | | | 26.956(df = 392) | | | |
| F statistic | | F(3, 394) = 4.699, p = .003 | | | | | F(3, 394) = 3.878, p = .009 | | | | | F(5, 392) = 4.630, p < .001 | | | |

**Tabelle 3:** Deskriptive Statistiken der Studie (Die Mittelwerte (Standardabweichungen in Klammern) für ästhetisches Gefallen und Fluency sind konditionell abhängig von der manipulierten Markenstärke).

| Abhängige Variablen | Experimentelle Manipulation | |
|---|---|---|
| | Proportion unverändert | Proportion verändert |
| Gefallen (Apple) | 63.92 (23.27) | 59.45 (25.49) |
| Gefallen (Huawei) | 52.67 (30.43) | 51.39 (29.21) |
| Fluency (Apple) | 73.74 (22.91) | 63.19 (27.07) |
| Fluency (Huawei) | 64.10 (25.51) | 64.51 (25.58) |

de, liegt es nahe, dass der indirekte Effekt insgesamt nicht signifikant ist. Deshalb wird im Folgenden der indirekte Effekt für ein moderiertes Mediationsmodell getestet, in welchem der Pfad vom Mediator Fluency auf die abhängigen Variablen ästhetisches Gefallen nicht moderiert wird, sondern nur der Pfad von der Prädiktorvariable Proportionsveränderung zum Mediator. Hieraus ergibt sich eine Anpassung der Gleichung des Modells (3).

$$\ddot{A}sthetisches\ Gefallen = \beta_{40} + \beta_{41}$$
$$* Proportionsver\ddot{a}nderung + \beta_{42} * Markenst\ddot{a}rke$$
$$+ \beta_{43} * Proportionsver\ddot{a}nderung * Markenst\ddot{a}rke \quad (4)$$
$$+ \beta_{44} * Fluency + \varepsilon_4$$

Modell (4) testet analog zu Modell (3) den direkten Effekt der Faktorvariablen und den indirekten Effekt vermittelt durch die subjektive Fluency und moderiert durch die Markenstärke. Die Moderation findet in diesem Modell allerdings nur auf dem Pfad zwischen der unabhängigen Variable Proportionsveränderung und dem Mediator Fluency statt. Wie in Modell (3) war der Haupteffekt der Proportionsveränderung nicht signifikant ($b_{41}$ = -1.048, p = .441), währenddessen der Haupteffekt der Markenstärke weiterhin signifikant war ($b_{42}$ = 4.506, p < .001). Der Interaktionseffekt aus Proportionsveränderung und Markenstärke war nicht signifikant ($b_{43}$ = -0.376, p = .782). Der Effekt der Fluency auf das ästhetische Gefallen war signifikant ($b_{44}$ = 0.154, p = .004).

Der konditionale indirekte Effekt bestimmt sich wie folgt:

$$Indirekter\ Effekt_i = (\beta_{21} + \beta_{23} * Markenst\ddot{a}rke_i) * (\beta_{44})$$

wobei i für die Ausprägung der Markenstärke steht (schwach [-1] und stark [1]).

Die Signifikanz des indirekten Effektes wurde wie zuvor mit der Bootstrapping-Methode und den gleichen Kriterien bestimmt. Der indirekte Effekt war im Falle der schwachen Marke nicht signifikant (Indirekter Effekt$_{schwach}$ = 0.034, SE = .331, [-0.61, 0.76]). Im Falle der starken Marke war der indirekte Effekt allerdings signifikant (Indirekter Effekt$_{stark}$ = -0.898, SE = .436, [-1.86, -0.17]). Der Index of Moderated Mediation war ebenfalls signifikant (Index = -0.932, SE = .057, [-2.21, -0.05]. Hieraus lässt sich ableiten, dass die moderierte Mediation nach Hayes (2015) signifikant ist.[3]

### 3.2.2. ANOVA

Zur Überprüfung der Hypothese H5 wurde eine Two-Way Analysis of Variance (ANOVA) des Types III durchgeführt (Landwehr, 2017) mit Proportionsveränderung und Markenstärke als unabhängige Variablen und das ästhetische Interesse als abhängige Variable. Die unabhängigen Variablen wurden identisch zur moderierten Mediationsanalyse zuvor effektkodiert. Die Proportionsveränderung wies keinen signifikanten Haupteffekt auf das ästhetische Interesse auf (F(1,394) = 0.443, p = .506). Ebenso hatte

hatte die Markenstärke keinen signifikanten Einfluss auf das ästhetische Interesse (F(1,394) = 0.152, p = .697). Der Interaktionseffekt aus Proportionsveränderung und Markenstärke hatte ebenfalls keinen signifikanten Einfluss auf das ästhetische Interesse (F(1,394) = 0.342, p = .559). Der Welch Zweistichproben t-test zeigte keine signifikanten Unterschiede zwischen der proportionsunveränderten und -veränderten Variante in der Bedingung der starken Marke (M$_{unverändert}$ = 48.45 vs. M$_{verändert}$ = 51.63, t(200.51) = -0.940, p = .349) als auch in der Bedingung der schwachen Marke (M$_{unverändert}$ = 50.93 vs. M$_{verändert}$ = 51.13, t(192.98) = -0.054, p = .957). Die Mittelwertsdifferenz zwischen der proportionsveränderten und -unveränderten Bedingung unterscheidet sich zwar in der Bedingung der starken Marke stärker als in der Bedingung der schwachen Marke (siehe Abbildung 2), war allerdings wie zuvor angegeben nicht signifikant. Auf dieser Basis wird Hypothese H5 verworfen.[4]

### 3.3. Diskussion

Nach Judd und Kenny (1981) und Baron und Kenny (1986) ist für die Signifikanz des indirekten Effektes und damit für den Nachweis einer Mediation die Signifikanz des totalen Effekts erforderlich. Der Auffassung der Autoren nach ist das Ziel der Mediation die Erklärung eines bestehenden Zusammenhangs zwischen einer unabhängigen und einer abhängigen Variablen. Sofern dieser Zusammenhang in Form des totalen Effektes nicht nachgewiesen werden kann, ist die Fortsetzung der Ermittlung eines indirekten Effektes und damit einer Mediation nicht zielführend. Dieser

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[3]Der Index of Moderated Mediation wurde ebenfalls für den Fall, dass nur der Pfad zwischen der Fluency und dem ästhetischen Gefallen moderiert ist, berechnet. Dieser erwies sich als nicht signifikant.

[4]Eine moderierte Mediationsanalyse wurde für ästhetisches Interesse als abhängige Variable, Proportionsveränderung und Markenstärke als unabhängige Variablen und subjektive Fluency als Mediator durchgeführt. Es konnten keinerlei signifikanten Parameter in den Modellen als auch kein signifikanter Index of Moderated Mediation festgestellt werden.
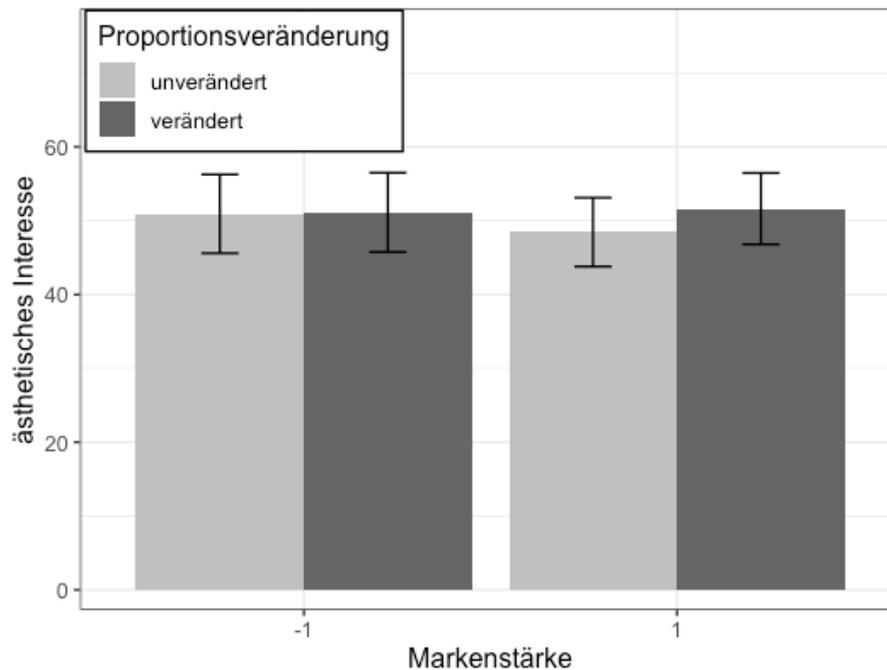
**Abbildung 2:** Effekte der experimentellen Manipulation von Proportionsveränderung und Markenstärke auf das ästhetische Interesse.

Vorgehensweise schließen sich Muller et al. (2005) für die Signifikanztestung der moderierten Mediation an. Aufgrund der Tatsache, dass der totale Effekt in Modell (1) dieser Studie nicht signifikant war, wäre bei Anwendung des kausalen Schrittansatzes sowohl die Berechnung, Signifikanztestung als auch Interpretation der Parameter von Modell (2) und Modell (3) ohne Mehrwert. Der grundsätzliche Schluss, der zu ziehen wäre, ist, dass die Proportionsveränderung keinen Effekt auf das ästhetische Gefallen hatte. Nach Hayes (2015) ist allerdings sowohl die Signifikanz des totalen Effekts als auch die Signifikanz der Parameter, aus denen sich der indirekte Effekt ergibt, irrelevant. Der Autor sieht im Index of Moderated Mediation die einzige, notwendige Bedingung, um anhand einer Signifikanztestung des Index das Bestehen einer moderierten Mediation festzustellen. Das Bestehen eines totalen Effektes muss nach Hayes (2015) keine Voraussetzung sein, um indirekte Effekte festzustellen und zu interpretieren. Dass der totale Effekt nicht signifikant ist, kann nach Hayes (2022) verschiedene Gründe haben. Beispielsweise kann der indirekte Effekt eine höhere statistische Power haben als der totale Effekt der gleichen Größe. Wenn der totale Effekt beispielsweise eine hinreichende Anzahl an Stichprobenfehlern enthält, ist es aufgrund des größeren Konfidenzintervalls wahrscheinlicher, dass er nicht signifikant ist. Des Weiteren würde die Abhängigkeit von der Signifikanz des totalen Effektes zur Unteranalyse der Daten führen (Hayes, 2022). Vor diesem Hintergrund werden die Ergebnisse der moderierten Mediationsanalyse diskutiert. Nichtsdestotrotz wird die Nicht-Signifikanz des totalen Effekts aufgrund von konzeptuellen Gründen in der generellen Diskussion adressiert.

Die Ergebnisse der Studie zeigen, dass eine moderierte Mediation der Beziehung zwischen der Proportionsveränderung und dem ästhetischen Gefallen vorliegt. Währenddessen die Moderation des Pfades von der Proportionsveränderung zum Mediator Fluency durch eine starke Marke nachgewiesen werden konnte, liegt keine Moderation des Pfades vom Mediator zum ästhetischen Gefallen vor. Eine theoretisch antizipierte, markenabhängige Disfluency Reduktion erfolgt damit nicht. Im Einklang mit der theoretischen Basis wird die durch die Proportionsveränderung induzierte Disfluency bei einer starken Marke wahrgenommen. Für die schwache Marke bewegt sich das Niveau der subjektiven Fluency für die proportionsunveränderte und -veränderte Variante auf gleichem Niveau. Dass die Proportionsveränderung in der Bedingung der schwachen Marke keinerlei Einfluss auf die Fluency nimmt, wurde auf Basis des konzeptuellen Frameworks nicht erwartet. Die Messung des ästhetischen Interesses wurde als Indikator für ein Disfluency Reduktionspotential erhoben. Im Gegensatz zum Resultat für das ästhetischen Gefallen, in welchem die Mittelwerte die Tendenz nahelegen, dass die proportionsunveränderte, fluentere Variante gegenüber der proportionsveränderten Variante bevorzugt wird, liegt für das ästhetische Interesse für die starke Marke die Tendenz vor, dass die proportionsveränderte Variante gegenüber der unveränderten Variante bevorzugt wird. Diese Tendenzen sind allerdings nicht signifikant.

## 4. Generelle Diskussion

### 4.1. Theoretischer Beitrag

Die Wirkung der Proportionsveränderung im Produktdesign wurde in der Forschung bislang noch nicht untersucht. Der erste Beitrag dieser Arbeit liegt daher in der Herleitung eines konzeptuellen Frameworks, welches auf Basis der Kategorisierungs- und Processing Fluency Theorie darauf abzielt, die Wirkungsweise der Proportionsveränderung auf das ästhetische Gefallen zu modellieren. Nach bestem Wissen des Autors dies die erste Arbeit, die die Proportionsveränderung im Sinne einer spezifischen Typikalitätsveränderung konzeptuell unterlegt. Der zweite Beitrag liegt in der empirischen Untersuchung der Hypothesen des konzeptuellen Frameworks im Smartphonemarkt. In der durchgeführten Onlinestudie konnte kein totaler Effekt der Proportionsveränderung auf das ästhetische Gefallen festgestellt werden. Der proportionsveränderte Stimulus der starken Marke wurde allerdings als signifikant weniger fluent wahrgenommen. Diese Tatsache bestätigt, dass die Proportionsveränderung Einfluss auf die Processing Fluency nimmt. Der proportionsveränderte Stimulus der schwachen Marke hat keinen Effekt auf die Processing Fluency genommen. Im Vorfeld wurde erwartet, dass die Proportionsveränderung des Stimulus der schwachen Marke zwar eine geringere, aber dennoch messbare Disfluency erzeugt. Die Ursache hierfür könnte in der zu geringen Familiarität der Probanden mit dem Stimulus liegen. Obwohl der Zielstimulus, das Huawei P50 Pro Smartphone, im Juli 2021 der Öffentlichkeit vorgestellt wurde, kam das Modell in Deutschland erst Ende Januar 2022 in den Handel (Kluczniok, 2022; Walker-Todd, 2022). Das Apple iPhone 13 Pro dürfte einer größeren Anzahl an Probanden bereits vor Durchführung der Studie bekannt gewesen sein und durch vorherige Expositionen den markenbezogenen, mentalen Prototyp angereichert haben. Aufgrund der geringeren Designkonsistenz der Huawei Produktserie und der grundsätzlich geringeren Exposition zum Zielstimulus konnte mutmaßlich keine Inkonsistenz zum mentalen Prototyp in der visuellen Verarbeitung bemerkt werden. Dies verdeutlicht die Kontextabhängigkeit einer Wirkung der Proportionsveränderung auf die subjektive Fluency. Die vergangene Lernerfahrung des Betrachters von impliziten Strukturen (Reber et al., 2004) der Produkte bestimmt, inwiefern die Proportionsveränderung wahrgenommen wird. Die Tatsache, dass der proportionsveränderte Stimulus der schwachen Marke keine geringere Fluency erzeugt hat, erklärt zumindest für die Manipulation der schwachen Marke, weshalb die Processing Fluency keinen signifikanten Effekt auf das ästhetische Gefallen ausüben konnte. Eine ähnliche Fluency Erfahrung, sowohl für den proportionsveränderten als auch -unveränderten Stimulus, sollte nämlich zu einem ähnlichen Maß an ästhetischem Gefallen führen. Dies ist bei den Stimuli von der schwachen Marke der Fall. Dass die signifikant geringere Fluency des veränderten Stimulus der starken Marke keinen signifikanten Einfluss auf das ästhetische Gefallen nahm, entspricht nicht der Erwartung. Eine mögliche Erklärung hierfür wäre, dass die Disfluency Reduktion mittels des konzeptuellen Markenwissens im Gedächtnis des Betrachters dazu führt, dass die geringere Fluency des Stimulus vollständig abgebaut wird und damit ein Disfluency bedingter Rückgang des ästhetischen Gefallens ausgeglichen wird. Diese Erklärung kann allerdings auf Basis der Studienergebnisse keine Anwendung finden. Die Moderation des Pfades von der Fluency zum ästhetischen Gefallen, welche eine Disfluency Reduktion und damit keinen signifikanten Rückgang des ästhetischen Gefallens erklärt hätte, war nicht signifikant. Eine andere Erklärung könnte daher in der Tatsache liegen, dass die induzierte Disfluency nicht ausreichend war, um ein signifikant geringeres ästhetisches Gefallen auszulösen. Hierfür spricht zum einen, dass das ästhetische Gefallen des veränderten Stimulus gegenüber dem unveränderten Stimulus der starken Marke leicht zurückgegangen ist. Der leichte Rückgang könnte einen potentiellen Effekt der Disfluency andeuten. Zum anderen hat das ästhetische Interesse des veränderten Stimulus gegenüber dem unveränderten Stimulus der starken Marke leicht zugelegt. Allerdings hat die Disfluency nicht in ausreichendem Maße Einfluss genommen, um signifikante Unterschiede aufweisen zu können. Eine höhere Disfluency als in dieser Studie induziert, könnte einen signifikanten Effekt der Processing Fluency sowohl auf das ästhetische Gefallen als auch auf das ästhetische Interesse aufweisen. Obwohl nach Hayes (2015) die moderierte Mediation der Beziehung zwischen der Proportionsveränderung und dem ästhetischen Gefallen, vermittelt durch die Processing Fluency und moderiert durch die Markenstärke, signifikant ist, ist der Einfluss des Mediators Fluency in dieser Studie sehr schwach. Die Proportionsveränderung erzeugt keine Disfluency in der Bedingung der schwachen Marke und womöglich eine zu geringe Disfluency in der Bedingung der starken Marke. Beide Ursachen zusammengenommen könnten erklären, weshalb der totale Effekt der Proportionsveränderung auf das ästhetische Gefallen nicht signifikant ist.

Eine prozentual größere Proportionsveränderung als in der durchgeführten Studie sollte nicht unbedingt verwendet werden, um eine höhere Disfluency zu erzeugen. Dies würde eher die Zweckmäßigkeit der Proportionsveränderung in Frage stellen und Verwirrung stiften. Es ist eher davon auszugehen, dass die Wirkungskraft der Proportionsveränderungen auf das ästhetische Gefallen von weiteren Faktoren als der Markenstärke abhängig sein könnte. Die Proportionsveränderung als gezielte Typikalitätsveränderung bettet sich in das Gesamtdesign eines Produktes ein, welches aufgrund seiner grundsätzlichen Designmerkmale eher als typisch oder atypisch wahrgenommen wird. Atypikalität ist grundsätzlich mit geringerer Fluency verbunden, bietet allerdings Potential für Disfluency Abbau und wird über den zeitlichen Verlauf mit ästhetischem Gefallen verbunden. Typikalität ist grundsätzlich mit hoher Fluency verbunden, verringert über den zeitlichen Verlauf allerdings das ästhetische Gefallen (Landwehr et al., 2013). Landwehr et al. (2013) zeigen für den deutschen Fahrzeugmarkt, dass Fahrzeuge mit typischem Design anfänglich höhere Verkaufszahlen aufwiesen, jedoch ab dem dritten Verkaufsjahr atypisch aussehenden Fahrzeugen unterlegen waren. Ab dem fünften Verkaufsjahr ist der Ab-

satz von Fahrzeugen mit atypischem Design kumulativ den typischen Pendants überlegen. Heitmann et al. (2020) zeigen, dass starke Marken besser in der Lage sind, atypische Fahrzeugdesigns in den Markt einzuführen, welche sich als markentypische Designs vom Segment absetzen und weiterentwickelt werden können. Hieraus könnten relevante Ableitungen für die Wirkungsvoraussetzungen der Proportionsveränderung gezogen werden. Der strukturelle Aufbau der Smartphonerückseite des im Experiment verwendeten Apple iPhone 13 Pro ist geprägt durch die Dreiaugenkamera, welche mit dem Apple iPhone 11 Pro im Jahr 2019 eingeführt wurde (siehe Abbildung 4 im Anhang). Im Smartphonemarkt ist es üblich, dass neue Nachfolgermodelle im Jahresturnus vorgestellt werden und damit wesentlich häufiger als für Produktserien im Fahrzeugmarkt. Die konservative Fortführung eines markentypischen Designs mittels der Proportionsveränderung könnte enge Grenzen haben. Es ist denkbar, dass das grundständige Design des Apple iPhone 13 Pro das Optimum bereits erreicht hat und eine weitere Fortführung des typischen Designs durch eine Typikalitätsveränderung mittels einer Proportionsveränderung nicht ausreichend Neugier erweckt. Des Weiteren wurde die Proportionsvergrößerung bereits beim Modellwechsel vom Apple iPhone 12 Pro zum Apple iPhone 13 Pro angewandt. Der Lebenszyklus des bestehenden Designs der Produktserie könnte bereits erreicht sein und nicht durch ein Facelift mittels einer weiteren Proportionsveränderung verlängert werden. Die Kritik in den Medien, welche bemängeln, dass das Design des Apple iPhone 13 keine signifikanten Veränderungen gebracht habe und langweilig sei, könnte diese Vermutung bestätigen (Gilbert, 2021). Karjalainen und Snelders (2010) zufolge kann die wiederholte Verwendung gleicher Designfeatures Langeweile und geringere Aufmerksamkeit bei den Konsumenten verursachen. Deshalb sind für das Produktdesign nach Karjalainen und Snelders (2010) neben der Marken- und Produkthistorie unter anderem das Stadium des Lebenszyklus und der Erneuerungszyklus des Marktes zu berücksichtigen.

### 4.2. Implikationen für das Management

Moderate Designanpassungen des Produktes werden für Marken mit einem hohen CBBE stärker wahrgenommen. Bei der Vorstellung von Produktneuheiten einer etablierten Produktserie könnten vor diesem Hintergrund gezielte Typikalitätsveränderungen ausreichen, um den Bogen zwischen Vertrautheit und Neugier beim Konsumenten zu schlagen. Insbesondere bei Produkten, die aufgrund ihrer Form oder ihres Aufbaus geringeres Potential für Designkomplexität beinhalten, könnte die Proportionsveränderung für starke Marken ein relevantes Designinstrument sein. Abschließend muss allerdings noch geklärt werden, unter welchen Bedingungen eine signifikante Auswirkung der Proportionsveränderung auf das ästhetische Gefallen bestehen könnte.

### 4.3. Limitationen und zukünftige Forschung

Die induzierte Proportionsveränderung als moderate Typikalitätsveränderung hat möglicherweise keinen ausreichend hohen subjektiven Fluency Rückgang erzielt, um das ästhetische Gefallen zu beeinflussen. In dieser Studie wurde zwar deutlich, dass eine höhere Inkongruenz zum mentalen Prototyp empfunden wurde, wenn es sich um ein Produkt einer starken Marke handelte. Dieser Umstand hatte allerdings weder das ästhetische Gefallen verringert noch das ästhetische Interesse erhöht. Es bleibt die Frage offen, ob die alleinige Proportionsveränderung eine ausreichend hohe Inkongruenz und damit ein für eine Produktneuheit ausreichend hohes Arousal erzielen kann. Die Typikalität basierend auf der Kategorisierung ist eines der Treiber von Processing Fluency. Neben der Kategorisierungsfluency können allerdings noch weitere, stimulusbezogene Faktoren wie Symmetrie oder visuelle Komplexität Einfluss auf die Processing Fluency Erfahrung nehmen (Reber et al., 2004). Winkielman et al. (2006) stellten hierzu in ihrer Studie fest, dass die Kategorisierungsfluency nicht die gesamte Processing Fluency Erfahrung der Beziehung zwischen Typikalität und Attraktivität erklärt. Mögliche Interaktionen mit anderen Variablen, die die Processing Fluency beeinflussen, sind daher denkbar, um die Inkongruenz zu erhöhen. Die Interaktion der Designkomplexität mit der Proportionsveränderung könnte eine Möglichkeit sein, um die Disfluency zu erhöhen. Landwehr et al. (2011) haben gezeigt, dass Typikalität des Designs mit der Komplexität (beispielsweise ungewöhnliche Farben oder einzigartige Körperlinien) des Designs von Fahrzeugen interagiert und sich positiv auf den Verkaufserfolg auswirkt. Bei Produkten wie Smartphones, für die sich ein geringeres Potential für die Kreation von Designkomplexität bietet, könnte sich die Interaktion einer moderaten Typikalitätsveränderung zusammen mit einer höheren Designkomplexität als zuträglich erweisen. Zum Beispiel könnte die Vorstellung einer außergewöhnlichen Produktfarbe oder Materialtextur zusammen mit der Proportionsveränderung interagieren, um höheres Arousal zu erwecken.

Der allgemeine Trend für das ästhetische Gefallen könnte für die Wirkung der Proportionsveränderung ebenfalls von Bedeutung sein. Beispielsweise kann angenommen werden, dass eine Proportionsverkleinerung der Smartphonekamera nicht in den allgemeinen Trend der technischen Verbesserung der Kamera, symbolisiert durch die Vergrößerung oder Hinzufügung von Kameralinsen (BBC Future, 2021), passt. Auf der anderen Seite dürfte ebenso angenommen werden, dass die Proportionsvergrößerung der Smartphonekamera seine Grenzen hat. In diesen Fällen kann die Disfluency mutmaßlich nicht so abgebaut werden, dass sie die ästhetische Präferenz gegenüber dem Produkt erhöht, sondern eher Verwirrung oder Langweile stiftet (Graf & Landwehr, 2015). Deshalb sollte die Sinnhaftigkeit der Proportionsveränderung ersichtlich werden, um positive Interpretationskraft bei der Auseinandersetzung mit dem Stimulus sicherzustellen. In der zukünftigen Forschung sollte dieser Umstand in der Manipulation der Proportionsveränderung berücksichtigt werden. In Zusammenhang des Markttrends sollte des Weiteren die Rolle des Erneuerungszyklus des Marktes für das Disfluency Potential einer Proportionsveränderung beleuchtet werden.

Das Experiment dieser Studie bildete nur eine einmalige Exposition zum Stimulus ab. Anhand dieser Exposition

wurde das ästhetische Gefallen, ästhetische Interesse und die subjektive Fluency gemessen. Aus diesem Grund wurde angenommen, dass das ästhetische Gefallen in Folge der Proportionsveränderung aufgrund des Rückgangs der Fluency in der Studie abnimmt, allerdings über eine längere Zeitspanne hinweg zunehmen sollte. Die Ursache der perspektivischen Zunahme des ästhetischen Gefallens liegt laut dem theoretischen Modell im Disfluency Abbau auf Seiten des Betrachters begründet, welcher wiederum durch das konzeptuelle Markenwissen getrieben ist. Das Potential eines solchen Disfluency Abbaus wurde in diesem Experiment im Rückgang der Fluency der proportionsveränderten Variante unterstellt. Hierbei handelt sich jedoch um eine theoretische Annahme, die im Rahmen dieses Experiments nicht bestätigt werden konnte. Bei High-Involvement Gütern ist es üblich, dass ein Produkt mehrfach betrachtet wird, bevor eine Kaufentscheidung gefällt wird (Cox & Cox, 2002). Das mehrfache Betrachten des Produktes wurde in dieser Studie nicht abgebildet. Insofern war die Möglichkeit der aktiven Auseinandersetzung des Betrachters mit dem Stimulus limitiert. Für eine verstärkte Auseinandersetzung mit dem Stimulus ist jedoch für ein durch den Betrachter getriebener Disfluency Reduktionsprozess notwendig (Graf & Landwehr, 2015). Sofern eine stärkere Auseinandersetzung mit dem Stimulus durch eine mehrfache Betrachtung desselben erfolgt, könnte der Mere Exposure Effekt als eine konkurrierende Erklärung für einen Anstieg des ästhetischen Gefallens in Frage kommen. Demnach könnte das wiederholte Betrachten von zunächst weniger fluenten Stimuli (atypischen Stimuli oder Stimuli mit mittlerer Designkomplexität) zum Anstieg des ästhetischen Gefallens führen, unabhängig von der Marke und des dazugehörigen konzeptuellen Wissens (Cox & Cox, 2002; Landwehr et al., 2013). Deshalb stellt sich die Frage, ob ein markenspezifischer Disfluency Abbau, welches das konzeptuelle Framework dieser Arbeit postuliert, bei wiederholter Betrachtung tatsächlich ein treibender Effekt ist. Dies sollte in der zukünftigen Forschung untersucht werden.

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# Passive Ownership and Long-Term Orientation around the World

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**Abstract**

The recent growth of passive investors led to concerns regarding their economic impact. This thesis investigates the influence of passive investors on the long-term orientation of their portfolio firms by using global panel data of publicly listed firms from 2000 to 2019. To tackle endogeneity concerns an instrument variable approach with MSCI All Country World Index membership as the instrument is applied. I find that exogenous increases in passive ownership enhance long-term investment in tangible assets, human capital, and organizational capital. While my results suggest that capital expenditures, number of employees, staff cost, and selling, general & administrative expenses are positively connected with higher passive ownership, I find no evidence for an effect on research & development expenses and average staff costs. In additional analyses I find the effect of passive investors to be time-variant and dependent of a firm's country of origin. My findings suggest that passive investors globally foster long-term orientation in their portfolio firms.

*Keywords:* Passive investors; Index funds; Long-term orientation; Innovation; Instrumental variables estimation.

## 1. Introduction

Over the last decades the rise of passive investment vehicles has been one of the major developments in capital markets.[1] Passive investors gained widely popularity due to the low fee structure, high diversification, and competitive performance of their products. This led to increasing cash inflows and a gain in market share compared to actively managed investments.[2] The assets under management (AUM) of index mutual funds and index Exchange Traded Funds (ETFs) sponsored by US-registered investment companies have grown from $0.4 trillion in 2000 to $9.9 trillion in 2020. Meanwhile, their market share in the long-term funds market increased by 31%[3], leading to a decline in the market share of actively managed mutual funds and actively managed ETFs.[4] In general this seems to be a worldwide phenomenon.[5]

The asset base of passive investors is extremely large and diversified. Doubts have been arisen of whether passive investors are able to monitor and engage in their portfolio companies in an appropriate manner. A lack of monitoring and engagement could weaken corporate governance and the long-term performance of the portfolio companies.[6] This leads to concerns and a demand for regulation.[7] While the passive investors' recent gain in power has implications for the whole economy, there is not much research yet regarding their impact on long-term orientation.[8] Such investigations are crucial for researchers and policymakers. Given the mixed results of the little existing literature there is a need for further examination.[9] This gets even more apparent with respect to their expected on-going growth.[10] Therefore, the research in the field of passive investors and long-term ori-

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[1]See Fisch, Hamdani, & Solomon, 2020, p. 17; Tian & Yang, 2021, p. 3.

[2]See Crane & Crotty, 2018, p. 62; Fichtner, Heemskerk, & Garcia-Bernardo, 2017, pp. 302-303; Fisch et al., 2020, p. 19; Investment Company Institute, 2021, pp. 85, 109, 220, 252; Strampelli, 2018, p. 810.

[3]From 9% in 2000 to 40% in 2020.

[4]See Investment Company Institute, 2021, pp. 48-49, 220, 251.

[5]See Anadu, Kruttli, McCabe, & Osambela, 2020, p. 24; Johnson, 2020; Strampelli, 2018, pp. 810-811.

[6]See Appel, Gormley, & Keim, 2016, p. 112; Bebchuk & Hirst, 2019, p. 2033; Schmidt & Fahlenbrach, 2017, pp. 285-286.

[7]See Fisch et al., 2020, pp. 17, 20; Tian & Yang, 2021, p. 3.

[8]See Bebchuk & Hirst, 2019, p. 2033; Dong & Eugster, 2017, p. 3; Tian & Yang, 2021, pp. 3, 6.

[9]See Appel et al., 2016; Cremers, Pareek, & Sautner, 2020; B. B. Francis, Maharjan, & Teng, 2020; Fu, Pan, & Wu, 2021; Liu, Shen, Wang, & Wang, 2019; Qin & Wang, 2018; Tian & Yang, 2021.

[10]See Bebchuk & Hirst, 2019, pp. 2033, 2041; B. B. Francis et al., 2020, p. 60.

entation is of specific interest.

This thesis contributes to literature in several ways. The used sample consists of very recent and worldwide data. This allows to examine the global effects of passive investors during the time they have grown most. Also, the influence of passive investors on non-standard long-term orientation facets such as human and organizational capital will be investigated. Regarding the used identification strategy this thesis delivers insights on the appropriateness of the MSCI All Countries World Index (MSCI ACWI) as an instrument for passive ownership.

At first, the theoretical foundations of passive investors and long-term orientation will be introduced. This is followed by a literature review regarding passive investors and long-term orientation. Based on the theoretical foundations and the literature review the hypotheses will be developed. The focus of this thesis lays on the empirical part. In the empirical part the effect of passive investors on the long-term orientation of their portfolio companies will be examined. To obtain baseline results I will start with standard ordinary least squares (OLS) regressions. Endogeneity concerns will be addressed by introducing an instrumental variable (IV) approach, with MSCI ACWI membership as the instrument for passive ownership. To check the robustness of the results several sensitivity tests will be run. The thesis ends with the discussion of the findings and a conclusion.

## 2. Theoretical foundation

In the following, the underlying theory and concepts needed for the understanding of this thesis will be contemplated. First, the term 'passive investor' will be defined. A detailed consideration of the institutional background in which passive investors operate and their instruments and incentives to excess influence on their portfolio companies will take place. Second, the term 'long-term orientation' will be defined and occurring conflicts of interest for investors and the portfolio companies' management will be considered. Furthermore, long-term orientation proxies used by the literature will be collected. On this basis the long-term orientation proxies which will be used in the empirical part of this thesis are determined. Third, literature documenting the influence of passive investors on portfolio companies will be reviewed. This review is split into the general effects of passive ownership and its specific effects on long-term orientation.

### 2.1. Passive investors

While active investors try to outperform the market by stock selection, passive investors aim to mimic the return of an underlying market index or investment style.[11] The most common passive strategy is to track an index. The tacking error is minimized by buying and holding the stocks - or a representative sample of the stocks - of an index. Stocks are

only bought if they get assigned to the underlying index and they are held until the company is discarded from the index. Due to the low portfolio turnover and reduced effort for stock selection, an indexing strategy leads to lower expenses compared to an active investment strategy.[12] The low cost diversification and the increasing awareness of retail investors of the relative underperformance of active funds led to a rise in popularity of passive investment strategies.[13]

The two best known passive investment vehicles are index mutual funds and index ETFs. Both share the same underlying passive indexing strategy, but while investors buy and sell shares of their mutual fund directly from the fund for the end-of-day net asset value, ETFs are traded over the day on stock exchanges for an actual market price.[14]

The term 'passive investors' is ambiguous.[15] While it usually refers to passive institutional investors it could also refer to retail investors with a buy-and-hold strategy. In this thesis 'passive investors' refers to passive institutional investors that follow an index strategy. Therefore, passive ownership is the fraction of stocks held by institutional investors as part of their index mutual funds or index ETFs.

In the literature different measures are used to proxy for passive ownership. Bushee (1998, 2001) classified passive investors on the institutional level. He created three groups: transient investors (high portfolio turnover & highly diversified), dedicated investors (low portfolio turnover & less diversified) and quasi-indexers (low portfolio turnover & highly diversified).[16] This method of classification is commonly applied by other researchers who use quasi-indexer ownership to proxy for passive ownership.[17, 18] Other researchers are arguing against the use of quasi-indexer ownership as a proxy for passive ownership. They criticize the aggregation on the institutional level instead of the individual fund level. This is problematic because also the active funds of an investment company with mostly passive funds would be classified as passive. Also, there seem to be obvious misclassifications of active investors as quasi-indexers, and conversely.[19]

Another passive ownership proxy which is commonly used in robustness tests is ownership by the three largest passive investment firms: BlackRock, Vanguard and State Street - the 'Big Three'.[20]

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[11]See Appel et al., 2016, p. 112; Fichtner et al., 2017, p. 299.

[12]See Dong & Eugster, 2017, p. 3; Fichtner et al., 2017, pp. 299-300; Grove, Clouse, & King, 2020, p. 8.

[13]See Appel et al., 2016, p. 112; Fisch et al., 2020, p. 19.

[14]See Fisch et al., 2020, p. 19; Robertson, 2019, pp. 833-834.

[15]See Fisch et al., 2020, p. 19.

[16]See Bushee, 1998, pp. 310-311; Bushee, 2001, p. 214.

[17]See Chen, Dong, & Lin, 2020, p. 496; Cremers et al., 2020, p. 4542; B. B. Francis et al., 2020, p. 39; Liu et al., 2019, p. 8; Tian & Yang, 2021, p. 10.

[18]See Appel et al., 2016, p. 114; Appel, Gormley, & Keim, 2019, p. 2759. They run sensitivity tests with quasi-indexers as an alternative definition of passive investors. See also Schmidt & Fahlenbrach, 2017, p. 301. In sensitivity tests they use a modified version as an alternative proxy for passive ownership.

[19]See Boone & White, 2015, p. 5; Gilje, Gormley, & Levit, 2020, p. 163; Schmidt & Fahlenbrach, 2017, p. 289.

[20]See Appel et al., 2016, p. 132; Dong & Eugster, 2017, pp. 18-19;

A more precise way of estimating passive ownership is by directly using the holdings on the fund level. A common way is to use the Center for Research in Security Prices (CRSP) Mutual Fund Database which assigns specific flags for index funds in combination with Thomson Reuters S12 mutual fund data. Funds are classified as passive if the index-flag or the fund name is indicating a passive strategy.[21] Even though this is a precise approach of estimating passive ownership it has its flaws. First, not all passive holdings stem from index funds. Funds with a passive strategy that do not track an index will not be classified as passive by this approach. Also, passively held stakes, which are not part of a fund, are not considered. Second, in the Thomson Reuters S12 mutual fund database institutions like banks or pension funds are not included. Those can also implement a passive index strategy.[22]

### 2.1.1. Institutional background

To understand passive investors' instruments and incentives to influence their portfolio companies it's crucial to be aware of the environment in which they are operating.[23]

An investment fund is created by the fund sponsor, which is usually a financial company. The fund sponsor typically offers several different funds of which some are active, and some are passive. The investment strategy determines the targeted group of assets. For an index fund, the investment strategy determines the underlying index. A fund is managed by the fund manager. After the creation different investors buy shares of the fund with their money. The fund manager invests the accumulated money into stocks of companies which fit the investment strategy of the fund. The fund manager represents the investors of the fund as the shareholder of the portfolio companies. She is responsible for monitoring and the execution of shareholder rights. It is her fiduciary duty to maximize shareholder value and thereby the return of the fund investors. The fund sponsors often have specific committees which centralize key decisions regarding execution of the shareholder rights. They also often use the recommendations of special advisory firms e.g., Institutional Shareholder Services for decisions on the portfolio companies' governance. For the management of the fund and to cover general expenses, the fund investors must pay a fee to the fund sponsor. The fee is usually calculated as a percentage of the AUM. For active funds, those fees are rather high because of the fund managers' effort for the selection of

stocks, which he assumes to be undervalued. For index funds, the fees are rather low, because the stock selection is predetermined with only small opportunity for the fund manager to exert influence.[24]

It should be noted that the incentives of the fund manager and the fund investors are not necessarily congruent.[25] Many economies have codes and principles aiming to protect fund investors of opportunistic behaviour by the fund manager due to moral hazard.[26] An example is the EU corporate governance framework.[27]

Within the index fund universe, it's notable that the 'Big Three' are the dominant investment sponsors. Due to economics of scale, reputation, and the standardized product, it's difficult for new entrants to enter the index fund market. Therefore the dominance of the 'Big Three' is expected to persist.[28] Also, their economic significance is expected to allow them to gain influence on politics and lawmaking.[29]

### 2.1.2. Instruments to influence portfolio companies

In general investors have two ways to influence a corporates' management: voice and exit. Voice represents their ability to use their voting rights at shareholder meetings and to engage privately with the corporates' management or board members. By voting investors can influence governance topics like the election of directors, mergers, or executive compensation. By engagement they can exert influence by submitting own shareholder proposals, by private negotiations, or by nomination of directors. Exit represents the shareholders' threat of selling their shares, leading to a lower share price. This pressures a corporates' management directly via a loss of value of their own stocks and stock options of the company and indirectly by threatening their position due to other shareholders losing money. For passive investors, the threat of exit is not feasible. Exiting a company for other reasons than a change in index membership would mean a higher tracking error. They have to hold their shares, whether they like or dislike the managements actions.[30] It should be noted that voice and exit are complementary. The usefulness of voice by passive investors could be reduced due to the limited exit threats. Managers know that the index funds can't exit easily, which leaves the passive investors in a weaker position in situations like private negotiations.[31] While most scholars agree that exit is not a feasible option, there are mixed opinions for voice. Heath et al. (2018) find that passive investors are more likely than active investors to side with management in voting situations. Also, they

B. B. Francis et al., 2020, p. 59.

[21]See Appel et al., 2016, pp. 115-116; Appel et al., 2019, pp. 2726, 2758-2759; Chen et al., 2020, p. 496; Dong & Eugster, 2017, p. 14; B. B. Francis et al., 2020, p. 39; Glossner, 2019, p. 10; Heath, Macciocchi, Michaely, & Ringgenberg, 2018, p. 9; Hou & Zhang, 2016, pp. 15-16; Palia & Sokolinski, 2019, p. 9; Qin & Wang, 2018, p. 9.

[22]See Appel et al., 2016, p. 131; Appel et al., 2019, p. 2759; Dong & Eugster, 2017, p. 14.

[23]It must be noted that the following description of the mutual fund environment is simplified. Also, the environment in which ETFs operate differs from the one described here. Nevertheless, the basic principles of fund sponsor, fund manager, fee structure and delegated shareholder rights are similar.

[24]See Bebchuk & Hirst, 2019, pp. 2036, 2043-2046, 2049-2050, 2078; Fisch et al., 2020, pp. 22-23, 27-28, 32, 44-46, 51, Strampelli, 2018, p. 821.

[25]See chapter 2.1.3.

[26]See Bebchuk & Hirst, 2019, p. 2045.

[27]See Strampelli, 2018, pp. 806-809.

[28]See Bebchuk & Hirst, 2019, p. 2044.

[29]See Fisch et al., 2020, p. 55.

[30]See Appel et al., 2016, p. 115; Bebchuk & Hirst, 2019, pp. 2045-2046; Qin & Wang, 2018, pp. 1-3.

[31]See Fichtner et al., 2017, p. 307; Qin & Wang, 2018, p. 3.

are less likely to engage with the management.[32] This is in line with Schmidt and Fahlenbrach (2017) assumption that the costs and personnel effort of the voice channel are too high for passive investors, given their low-cost structure and large number of portfolio companies.[33] Opposing, Appel et al. (2016) find that a higher level of passive ownership decreases the support for management proposals and increases the support for governance-related shareholder proposals.[34] Also, Fisch et al. (2020) state that passive investors are increasingly voting against management and are focussing on private engagement.[35] Iliev and Lowry (2015) find that index funds are relatively active voters in firms they have significant stakes in.[36]

### 2.1.3. Evaluation of incentives to foster long-term orientation

To understand the influence of passive investors on long-term orientation, it's important to consider their goals and the incentives they have to foster long-term thinking. The fundamental goal of passive investors is to maximize their own income. Because their income depends on fees based on their AUM, they aim at maximizing the AUM of their funds. At the fund level, their goal is to reduce tracking error. A low tracking error attracts investors, which leads to higher AUM for this fund and ultimately increases the fees the fund sponsor receives. It must be noted that a passive fund competes not only against other passive funds for investors' money, but also against all kind of other investment opportunities on a price and performance level.[37]

After exhibiting the goals of passive investors, an investigation of their incentives to enhance long-term orientation can take place.[38] The underlying assumption is that long-term oriented measures aim to increase the firm value in the long run.[39] Enhancing long-term orientation can be beneficial because:

- Limited exit / Long investment horizon: Passive funds do not only compete against other passive funds but also against active funds. While active funds can exit underperforming companies, passive funds are stuck with them in the long-term. They have incentives to limit this advantage of active funds by enhancing the long-term orientation of their low-performing portfolio companies.[40] In general passive investors have a long investment horizon. Therefore, they rather focus on long-term than short-term value creation.[41]

- Fiduciary duty: Passive investors have a fiduciary duty to manage the assets of their investors in their best interest.[42] Hereby, measures that focus on the companies' long-term value creation are beneficial for the investors. Regulatory pressure is increasingly forcing the investment sponsors to pursue their fiduciary duty.[43]

- Higher fee income: Passive investors directly benefit from long-term value enhancing measures. An increase in the value of their portfolio companies also increases their AUM, which leads to a higher fee income.[44] It must be noted that this effect is rather small.[45]

- Economies of scale: Many passive investors centralize their stewardship decisions. When voting on the fund family level they can use their size and breadth of holdings to engage more efficiently. Their large ownership stakes help in voting or pressure situations. Especially market wide initiatives which are applicable to all portfolio companies can help to improve the portfolio companies' long-term orientation efficiently without the necessity of firm-specific knowledge.[46]

- Harvesting benefits for many funds: A passive investor might have several funds with stakes in the same company. By pushing long-term thinking in a portfolio company all of their funds owning stakes will capture the benefits.[47]

- Reputation: Passive investors have incentives to be perceived as responsible investors by their investors and the public. Building a reputation as being a long-term oriented investor could be attractive to customers.[48]

From an incentive-based view there are also reasons for passive investors not to foster the long-term orientation of their portfolio companies:

- Other goals: The goal of a passive investor on the fund-level is to mimic the index return as closely as possible in order to reduce tracking error, and not to increase the index return itself.[49]

- Costs and effort: Monitoring and engagement in the passive investors' large portfolios is associated with high cost and personnel efforts.[50]

- Free-rider problem: If passive investors enhance the long-term orientation of their portfolio companies, all

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[32]See Heath et al., 2018, pp. 6-7.
[33]See Schmidt & Fahlenbrach, 2017, pp. 286-287.
[34]See Appel et al., 2016, pp. 127-128, 134.
[35]See Fisch et al., 2020, pp. 48-49.
[36]See Iliev & Lowry, 2015, p. 466.
[37]See Fisch et al., 2020, pp. 18, 23, 28, 31-32.
[38]It must be noted that some of the incentives discussed in this chapter do not exclusively work for passive investors. They might also relate to institutional investors in general.
[39]See Lumpkin, Brigham, & Moss, 2010, p. 245.
[40]See Appel et al., 2016, p. 113; Heath et al., 2018, p. 1; Liu et al., 2019, p. 3.
[41]See Fichtner et al., 2017, p. 309.

[42]See Fisch et al., 2020, p. 36.
[43]See Strampelli, 2018, pp. 816-817, 821.
[44]See Appel et al., 2016, p. 113.
[45]See Bebchuk & Hirst, 2019, pp. 2037, 2053.
[46]See Fisch et al., 2020, pp. 18, 26, 35, 37-39, 42-45, 49.
[47]See Fisch et al., 2020, pp. 35, 42, 49.
[48]See Strampelli, 2018, pp. 816, 821.
[49]See Appel et al., 2016, p. 113; Fichtner et al., 2017, p. 307.
[50]See Appel et al., 2016, p. 113; Cremers et al., 2020, p. 4542; Fisch et al., 2020, pp. 21, 43; Heath et al., 2018, p. 1; Schmidt & Fahlenbrach, 2017, p. 300.

other shareholders of those companies will also benefit without bearing any costs. Especially compared to funds tracking the same index they lose advantage, because they compete on a cost basis, not a performance basis.[51]

- Business ties: Corporate retirement plans are major customers of passive investors. If a fund manager decides to actively oppose a short-term oriented manager and interfere into the portfolio companies' business, they risk antipathy by the company's management. This could affect the company's decision on which investment firm to give their retirement plan to.[52, 53]

- Cross-ownership: It's likely that a passive investor owns competitors, suppliers, or customers of each other. Long-term value increasing measures for one portfolio company might impact other companies they own negatively.[54]

- Drawbacks for other products: Even mostly passive investors might offer several other investment products, which can lead to a conflict of interest. For a specific company, they can have a long position in an index fund and a short position in a hedge fund. They might decide to vote against long-term value enhancing measures to allow their more profitable products to perform better.[55]

- Schedule 13D: Fund sponsors that hold more than 5% of a company need to file schedule 13D or schedule 13G. Hereby, schedule 13D is associated with more costs and effort, but is needed if there is the intention to influence the company. Investors filing the schedule 13G must not exert too much direct influence on their portfolio companies, otherwise they risk legal consequences.[56]

- Political backlash: The large passive investors always run the risk of being perceived as too powerful by public and politics. This is demonstrated by the 'Big Three' regularly trying to downplay their power. Ambitious engagement in their portfolio companies could lead to a re-evaluation of their role by the public and legislators. The consequence could be the introduction of laws and restrictions. Therefore, the fear of political

backlash might limit their incentives to engage.[57] I expect that for long-term oriented measures the risk of political backlash is probably lower.

The incentives of passive investors whether to push long-term oriented thinking in their portfolio companies are ambiguous. This strengthens the need for empirical research regarding passive investors and their influence on the long-term orientation of their portfolio companies.

## 2.2. Long-term orientation

In the following, the term 'long-term orientation' will be defined and explained. Then, incentives for corporate managers to underinvest in projects that enhance long-term value will be considered. Finally, proxies for long-term orientation which are used in literature are collected.

Lumpkin et al. (2010) define long-term orientation as "the tendency to prioritize the long-range implications and impact of decisions and actions that come to fruition after an extended time period".[58] Therefore, the aim of long-term orientation is to behave and decide in a way that maximizes value in the long run. This focus on the long-term might affect the short-term negatively.[59] Investments like capital expenditures (CAPEX) and research and development (R&D) expenses are practical examples of long-term oriented behavior. Expenditures must be made upfront, while the benefit is expected to come at a later point in time. In the short-term the upfront expenditures might result in the missing of earning targets. In the long-run the investments will help the business to stay competitive and to facilitate growth.[60]

Investing in a long-term value enhancing project is rational and beneficial for the shareholders.[61, 62] Nevertheless, corporate managers' incentives differ from those of the shareholders. Managers seem to prefer short-term earnings over long-term perspective. Due to different objectives, their discounting rate is lower than the discounting rate of the shareholders, leading to a preference for short-term profits.[63] This gets even more apparent considering that executives' tenure is often only a few years. While bearing the costs and effort in the present, they might not be able to harvest the future benefits of the long-term oriented projects.[64] A survey by Graham, Harvey, and Rajgopal (2005) strengthens this theory. They found that a large percentage of corporate managers would decrease R&D expenses or even give up or delay a positive net present value (NPV) project, if the alterna-

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[51]See Fisch et al., 2020, p. 21; Heath et al., 2018, p. 1; Schmidt & Fahlenbrach, 2017, p. 287.

[52]Even if the management does not directly choose the retirement plan sponsor, they might influence the responsible committee.

[53]See Appel et al., 2019, pp. 2721-2722; Bebchuk & Hirst, 2019, pp. 2062-2064; Fisch et al., 2020, p. 65.

[54]See Fichtner et al., 2017, pp. 319-320; Fisch et al., 2020, p. 68; Strampelli, 2018, pp. 827-828.

[55]See Fichtner et al., 2017, p. 307; Fisch et al., 2020, pp. 66-67.

[56]See Bebchuk & Hirst, 2019, pp. 2065-2066; Brav, Jiang, Ma, & Tian, 2018, p. 258; Morley, 2019, pp. 1423-1430; Schoenfeld, 2017, p. 24.

[57]See Bebchuk & Hirst, 2019, pp. 2066-2069, 2073-2074.

[58]Lumpkin et al., 2010, p. 245.

[59]See Brauer, 2013, pp. 386-387.

[60]See Flammer & Bansal, 2017, p. 1830, Lee & O'Neill, 2003, p. 214, Lerner & Wulf, 2007, p. 634.

[61]It should be noted that this statement holds in general. There could also be situations in which it's rational to reject a long-term value enhancing project e.g., due to prioritizing during capacity shortages.

[62]See David, Hitt, & Gimeno, 2001, p. 144; Flammer & Bansal, 2017, p. 1830.

[63]See D. Ferreira, Manso, & Silva, 2014, p. 259; Flammer & Bansal, 2017, p. 1830.

[64]See Brauer, 2013, p. 387.

tive is to miss short-term earnings targets.[65] From an agency point of view there is a clear conflict of interest between the manager and the shareholders. The lazy manager hypothesis and the career concern model are two models trying to explain the managers behavior. According to the lazy manager hypothesis the manager prefers to avoid effort. Naturally, long-term innovation projects require a lot of effort, which is not in the interest of the manager.[66] According to the career concern model the manager acts in a way that secures her career. Long-term innovation projects are characterized by a long duration and high risk. Managers are often evaluated by short-term earnings targets which conflicts with the execution of long-term projects. Additionally, due to the high probability of project failure their job security might be at risk, while shareholders are diversified by owning stocks of several companies.[67] A lack of technical skills to evaluate a project or preferring projects which are easy to communicate to shareholders[68] might be additional barriers for managers, especially regarding long-term innovation projects.[69] There is a clear conflict of interest which the shareholders must be aware of. Especially passive investors with their long investment horizon and their large stakes should monitor the management closely and be willing to enforce long-term oriented thinking.

In the literature the used proxies of long-term orientation are usually focussing on investment activities. For investment and innovation input, measures based on CAPEX and R&D are often used.[70] Innovation output is usually measured by patent counts or citation counts.[71] Tian and Yang (2021) look further into the strategy of the innovation activities by using number and length of patent claims to differentiate between innovative exploitation and exploration. Hereby, fewer claims and a shorter length indicate exploration of new knowledge. Exploitation denotes to the further development of already existing knowledge.[72]

There are also alternative measures of long-term orientation. Flammer and Bansal (2017) create a long-term index by analyzing firms' 10-K filings regarding words associated with long-term and short-term orientation. They then use the ratio of long-term to short-term words. Additionally, they use shareholder proposals supporting long-term incen-

tives for executive compensation as a proxy for long-term orientation.[73] Bena et al. (2017) use employment-based measures to take the long-term investment into human capital into account. They use number of employees, staff costs, and average staff costs. With average staff costs allowing them to proxy for the skill-level of the employees. They also assess the investment in organizational capital by a measure based on selling, general, and administrative (SG&A) expenses.[74] Some authors suggest that corporate social responsibility (CSR) is also associated with an improve of a firm's long-term perspective by reduction of risks and reputational benefits.[75]

### 2.3. Documented effects of passive ownership on portfolio companies

While most existing literature that examines the effect of ownership structure on long-term orientation focuses on institutional investors, there is not much research yet concentrating specifically on passive investors.[76] For institutional investors, there is evidence that a higher level of institutional ownership in connected with more innovation activities.[77] In the following, existing literature studying the influence of passive investors on their portfolio companies will be reviewed. A detailed summary of the literature review can be found in Appendix 1.

### 2.3.1. General effects

Even though this thesis focuses on passive investors' effect on long-term orientation, it's important to understand their influence on other corporate facets. Therefore, a selection of existing studies will be collected with a brief description of their main results.

Appel et al. (2016) find that higher ownership by passive investors is associated with less CEO power, more shareholder-friendly governance decisions and better long-term performance, measured by return on assets (ROA) and Tobin's Q.[78] Schmidt and Fahlenbrach (2017) results are opposing to Appel et al. (2016). They indicate that passive investors put low effort into monitoring the management and rather shift power to the CEO.[79] Scholars consider those opposing results and hypothesize that passive investors use their influence rather on low-cost than high-cost governance activities. Additionally, differences in the methodology might affect the results.[80] The results of Heath et al. (2018) also indicate that passive investors shift power to the management. This is in line with the theory of passive investors

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[65]See Graham et al., 2005, pp. 65-67.

[66]See Aghion, Reenen, & Zingales, 2013, pp. 277-278.

[67]See Aghion et al., 2013, pp. 277-278; Brossard, Lavigne, & Sakinç, 2013, pp. 1034-1035; Holmstrom, 1989, p. 309.

[68]Complicated long-term oriented projects might not be assessed correctly by the shareholders due to a lack of knowledge. There is also a disclosure problem. If the manager publishes a lot of information, it helps the shareholders to understand and evaluate the project, but it can also be used by competitors.

[69]See Brossard et al., 2013, pp. 1034-1035; D. Ferreira et al., 2014, pp. 259, 288.

[70]See Bena, Ferreira, Matos, & Pires, 2017, p. 125; Flammer & Bansal, 2017, p. 1834; B. B. Francis et al., 2020, p. 37; Luong, Moshirian, Nguyen, Tian, & Zhang, 2017, pp. 1451-1452; Tian & Yang, 2021, pp. 4-5.

[71]See Bena et al., 2017, pp. 126-128; Luong et al., 2017, pp. 1451-1452, 1456-1457; Tian & Yang, 2021, pp. 4-5.

[72]See Tian & Yang, 2021, pp. 4-5.

[73]See Flammer & Bansal, 2017, p. 1835.

[74]See Bena et al., 2017, p. 126.

[75]See Kim, Kim, Kim, & Park, 2019, p. 4.

[76]See Dong & Eugster, 2017, p. 3; Tian & Yang, 2021, pp. 3, 6.

[77]See Aghion et al., 2013, pp. 297-299; Bushee, 1998, pp. 319-322.

[78]See Appel et al., 2016, pp. 114, 124-129, 134.

[79]See Schmidt & Fahlenbrach, 2017, pp. 286, 293-300.

[80]See Appel et al., 2016, pp. 114, 130; Schmidt & Fahlenbrach, 2017, p. 287; Strampelli, 2018, pp. 822-823.

being passive owners.[81] Liu et al. (2019) find that quasi-indexers seem to increase CEO power and the value and number of stock options granted to non-executive employees.[82] Non-executive stock options have been found to be positively associated with higher innovation output.[83] Therefore, Liu et al. (2019) results indicate that passive investors might positively influence long-term orientation by fostering their employees' incentives regarding innovation. Qin and Wang (2018) find decreasing effects on firm value, operating performance, and managers' pay-for-performance sensitivity. Their results differ from existing literature. They assume this is due to their sample consisting of larger firms.[84] Regarding CSR there are mixed results. While Chen et al. (2020) find that higher ownership by passive investors leads to an improve in CSR activities, Glossner (2019) find no effects and Hou and Zhang (2016) find decreasing effects.[85] Palia and Sokolinski (2019) find an increase in the stock supply to short-sellers and in short interest, while the lending fees decrease. Therefore a rise in passive ownership seems not to affect price efficiency negatively, as suggested by other researchers.[86] Appel et al. (2019) examine the effects of passive investors on activist behavior. Their results suggest that an increase in passive ownership leads to activists being more successful in removing takeover defences and achieving board representation or the sale of the company. Higher passive ownership seems to alleviate barriers for activists for more costly forms of engagement.[87] Their results express the importance of other investor types adapting to the rise in passive ownership. There is also evidence that passive investors positively influence earnings quality, timeliness and preciseness of earnings forecasts, voluntary management disclosure, and audit quality.[88]

### 2.3.2. Effects on long-term orientation

In this chapter empirical evidence of passive investors' effect on long-term orientation will be reviewed. For each study, the results and important methodological aspects will be described.

Several studies find a positive relation between passive ownership and long-term orientation: B. B. Francis et al. (2020) apply an IV approach based on Russell 1000/2000 affiliation and find that CAPEX and R&D are positively affected by an exogenous increase in passive ownership. Their first stage shows a positive association between Russell 2000 membership and passive ownership. Their results are robust to the passive ownership definition used by Appel et al.

(2016)[89] and to ownership of the 'Big Three'.[90, 91] Fu et al. (2021) find a positive effect on innovation input and output, for their sample of Chinese listed companies. They apply panel regressions. Their results indicate that passive investors increase R&D expenses and future granted patents. To address endogeneity concerns due to omitted variables and selection bias, they perform additional tests. To control for omitted variables, they build models with year and firm fixed effects, and to avoid selection bias they use the logarithm of the increments of their innovation and passive ownership variables. With a sample period from 2007 to 2017 they use very recent data.[92, 93] Liu et al. (2019) find a positive effect on innovation input and output. They apply an IV approach with Russell 2000 membership as the instrument for passive ownership. In their first stage they find that index assignment to the Russell 2000 is associated with higher levels of passive ownership. Their second stage suggest that an exogenous rise in passive ownership increases R&D expenses, number of patents, total citations, and number of citations per patent. They hypothesize that passive investors rather shift power to the management than using the two classic channels: voice or exit. This allows managers to efficiently promote innovation.[94, 95] Tian and Yang (2021) also find a positive effect on innovation input and output. Their study follows an IV approach based on Russell 1000/2000 affiliation. Their first stage suggests a positive association between Russell 2000 membership and passive ownership. They find that R&D expenses, number of patents, and number of citations received per patent are positively connected to exogenous increases in passive ownership. They also analyze passive investors' effect on innovation strategy and find that the number and length of patent claims is positively affected by higher passive ownership. This indicates that the portfolio companies are more likely to research in already mature fields than exploring new ones. Passive investors do not seem to incentivise executives for risky explorative research, but rather make them even more risk-averse by increasing their replacement risk. This might explain their preference for knowledge exploitation over exploration. Tian and Yang assume that their results appear due to passive investors being active in monitoring their portfolio companies.[96, 97]

There are also studies finding no effect of passive investors on long-term orientation: Appel et al. (2016) also apply an IV approach based on Russell 1000/2000 affiliation. Their first stage shows that passive ownership is pos-

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[81] See Heath et al., 2018, pp. 6, 18.
[82] See Liu et al., 2019, pp. 18-21.
[83] See Chang, Fu, Low, & Zhang, 2015, p. 15.
[84] See Qin & Wang, 2018, pp. 4, 8, 15-17, 22-26.
[85] See Chen et al., 2020, p. 496; Glossner, 2019, p. 21; Hou & Zhang, 2016, pp. 7, 23.
[86] See Palia & Sokolinski, 2019, pp. 27-29, 31.
[87] See Appel et al., 2019, pp. 2740, 2743-2749, 2760.
[88] See Boone & White, 2015, pp. 16-17, 19; Dong & Eugster, 2017, pp. 22-24; B. B. Francis et al., 2020, pp. 49-54.

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[89] See chapter 2.1.
[90] Sample period: 1998-2006; Passive investor definition: Quasi-indexer [Bushee (2001)].
[91] See B. B. Francis et al., 2020, pp. 37, 39, 48, 54-55, 59.
[92] Sample period: 2007-2017; Passive investor definition: Fund name contains the string 'index'.
[93] See Fu et al., 2021, pp. 525, 530, 533-534, 540-542.
[94] Sample period: 1995-2006; Passive investor definition: Quasi-indexer [Bushee (2001)].
[95] See Liu et al., 2019, pp. 4-6, 8, 15-16, 18-19.
[96] Sample period: 1984-2006; Passive investor definition: Quasi-indexer [Bushee (2001)].
[97] See Tian & Yang, 2021, pp. 4-5, 7-8, 10, 12-32, 38.

itively associated with Russell 2000 membership. They find no change in CAPEX or R&D expenses following an exogenous increase in passive ownership. Their results are robust to the quasi-indexer definition by Bushee (2001)[98] and to ownership of the 'Big Three'. They assume that passive investors focus on low-cost monitoring.[99, 100] Cremers et al. (2020) find that a large[101] increase in passive ownership seems not to affect innovation input measured by R&D expenses. They use difference-in-differences regressions for stocks added to the Russell 2000. They also find that after a stock is included into the Russell 2000 passive ownership increases significantly.[102, 103]

Finally, there is also empirical evidence of a negative influence of passive investors on long-term orientation: A study by Qin and Wang (2018) suggests that R&D, CAPEX, and five-year capitalized R&D decrease with higher levels of passive ownership. They explain the differences to existing research by their sample choice. Their sample consists of S&P 500 constituents and comparable non-S&P 500 firms. S&P 500 constituents are in general larger and might behave differently than firms at the Russell 1000/2000 threshold, which is often used in the literature. It must be noted that they argue against potential endogeneity concerns and use pooled regressions. They assume that passive investors have neither the incentives, nor the flexibility to select their portfolio companies based on their long-term orientation. Also, if passive investors prefer long-term oriented firms, then the results must be positively biased. Therefore, they expect endogeneity not to drive their results.[104, 105]

There is no clear consensus in the literature of how passive investors affect long-term orientation. Nevertheless, more studies are indicating a positive connection. Especially for innovation output, literature suggests a positive influence.

## 3. Hypothesis creation

The research question of this thesis is how passive investors influence the long-term orientation of their portfolio companies. To examine this question the hypotheses will be created.

To tackle endogeneity concerns an IV approach is applied. Hereby, passive ownership is instrumented by MSCI ACWI affiliation. To fulfil an instrument's relevance condition there

must be a clear association between MSCI ACWI membership and passive ownership.[106] It seems reasonable that index mutual funds and ETFs that track the MSCI ACWI will add new constituents of the index to their portfolio to minimize tracking error. This should lead to systematically higher passive ownership of MSCI ACWI constituents compared to non-constituents.[107] A similar effect has already been documented for the Russell 1000/2000 setting, which is commonly used for IV estimations in the 'passive investors' literature.[108] The MSCI ACWI environment is not directly comparable to the one of the Russell 1000/2000, but the theoretical reasoning regarding index inclusion and passive ownership match. Therefore, I expect MSCI ACWI inclusion to be associated with an increase in passive ownership.

> Hypothesis 1: Affiliation to the MSCI ACWI leads to an increase in passive ownership.

In chapter 2.1.3 the incentives of passive investors to foster long-term orientation have been examined. From a theoretical point of view there is no definite answer which incentives outweigh. Nevertheless, the passive investors' public emphasizing of their fiduciary duty and the urgency of long-term orientation indicates that they focus on the long-term orientation of their portfolio companies.[109] The literature review in chapter 2.3.2 supports this assumption. Especially innovation output seems so be positively affected by an increase in passive ownership. But also for investment input there is a clear tendency towards a positive relationship. Considering the theory and empirical findings, it seems reasonable that their positive effect on investment expenditures also holds for a global sample.

> Hypothesis 2: An increase in passive ownership leads to higher investment expenditures in tangible and intangible assets.

Brauer (2013) argues that not only innovation-related investment but also an appropriate human resource management and business portfolio management are part of the long-term orientation of a firm.[110] In accordance with the majority of literature suggesting that passive investors have a positive effect on investments in innovation, it seems plausible that they also encourage investments in human and organizational capital. As discussed in chapter 2.1.3, there could be a reputational component which incentivises passive investors to promote investments into the employees.[111] Also, Liu et al. (2019) finding that passive ownership increases the

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[98]See chapter 2.1.

[99]Sample period: 1998-2006; Passive investor definition: index fund-flag (CRSP Mutual Fund Database) or by fund name.

[100]See Appel et al., 2016, pp. 114-116, 121-122, 130-133.

[101]Hereby 'large' means that the two-year increase in quasi-indexer ownership is above the sample median.

[102]Sample period: 1990-2016; Passive investor definition: Quasi-indexer [Bushee (1998)].

[103]See Cremers et al., 2020, pp. 4539, 4542-4543, 4549.

[104]Sample period: 2001-2015; Passive investor definition: index fund-, enhanced index fund- or ETF-flag (CRSP Mutual Fund Database).

[105]See Qin & Wang, 2018, pp. 4-6, 8-9, 19-21.

[106]See Roberts & Whited, 2013, pp. 511-512.

[107]See Appel et al., 2016, p. 113.

[108]See Appel et al., 2016, pp. 121-122; Boone & White, 2015, p. 16; Cremers et al., 2020, pp. 4541-4542; Dong & Eugster, 2017, pp. 20-21; B. B. Francis et al., 2020, pp. 47-48; Glossner, 2019, pp. 15-16; Hou & Zhang, 2016, pp. 6-7; Palia & Sokolinski, 2019, pp. 26-27; Schmidt & Fahlenbrach, 2017, pp. 292-293; Tian & Yang, 2021, pp. 14-17.

[109]See Fink, 2014; Fink, 2015; Fink, 2016; Fink, 2017.

[110]See Brauer, 2013, pp. 389-391.

[111]See Strampelli, 2018, pp. 816, 821.

number and value of non-executive stock options indicates a focus on human capital topics.[112]

> Hypothesis 3: An increase in passive ownership leads to higher human capital and organizational investments.

## 4. Empirical part

The following empirical analysis examines the effect of passive investors on firms' measures of long-term orientation. Hereby, the hypotheses from chapter 3 will be tested.

In the context of passive ownership and corporate behavior it's important to pay attention to potential endogeneity, which can limit inference. Endogeneity appears because of omitted or unobservable explanatory variables. If those variables are correlated with both, the long-term orientation measure and passive ownership, inference is not possible, because passive ownership would be correlated with the error term of the regression. This is called an omitted variable bias. Simultaneity can also lead to endogeneity concerns. Simultaneity occurs when the direction of the causality is unclear. Also measurement errors can lead to endogeneity.[113]

In my analysis omitted variables are likely a concern, because even though I can include a set of control variables, it's impossible to control for all confounding factors. Also, simultaneity seems thinkable. Simultaneity arises when passive investors favor firms which are expected to be long-term oriented. One could argue that when using index fund holdings, the preferences of passive investors should not matter, because they must buy the constituents of the tracked index. In practice passive index investors are able to deviate to some extend from their underlying index. Especially for some types of ETFs, Cheng, Massa, and Zhang (2019) found a strong stock selection ability. Also, through the initial selection of the underlying index a passive investor can influence its portfolio companies. Another way of influencing the portfolio companies is to influence the index provider to adjust their criteria for index additions and exclusions.[114]

In general, this thesis follows Bena et al. (2017) methodology, who use an IV approach with MSCI ACWI membership as the instrument in the context of foreign investors and innovation. They include firm fixed effects, which allows them to focus on within-firm changes regarding MSCI ACWI membership.[115] I transfer this approach to the research question of this thesis and use the MSCI ACWI to instrument for passive ownership, instead of foreign ownership. Therefore, the IV approach allows to capture the 'good' exogenous variation in passive ownership that appears due to MSCI ACWI inclu-

sion of a firm.[116] A detailed discussion of the suitability of the used instrument will be carried out in chapter 4.2.2.

Despite the endogeneity concerns the analysis starts with a standard OLS regression to get baseline results:

$$OLS: \ LTO_{it} = \beta_1 PO_{it-1} + \sum_{j=2}^{J} \beta_j X_{jit-1} + \xi_i + \eta_t + \epsilon_{it} \quad (1)$$

To address potential endogeneity, the two-stage least squares regressions (2SLS) will be conducted:

$$Stage\,1: \ \widehat{PO}_{it} = \gamma_1 MSCI_{it} + \sum_{j=2}^{J} \gamma_j X_{jit} + \xi_i + \eta_t + \omega_{it} \quad (2)$$

$$Stage\,2: \ LTO_{it} = \beta_1 \widehat{PO}_{it-1} + \sum_{j=2}^{J} \beta_j X_{jit-1} + \xi_i + \eta_t + \epsilon_{it} \quad (3)$$

The dependent variable $LTO_{it}$ refers to the long-term orientation measure of company i in year t. All the explanatory variables are lagged by one year. $PO_{it}$ is the fraction of passive holdings of company i in year t. $X_{jit}$ are the J-1 control variables of company i in year t, and $\epsilon_{it}$ and $\omega_{it}$ are the residuals for the observations. In the 2SLS regression, $\widehat{PO}_{it}$ is the passive ownership estimate for each company in each year. This estimation is calculated in the first stage by using $MSCI_{it}$, which is a dummy that equals one if company i is member of the MSCI ACWI in year t[117] and zero otherwise, and the set of control variables. Also, year and firm fixed effects are included. The year fixed effects $\eta_t$ capture the general rise in passive ownership, to avoid time trends driving the results.[118] The firm fixed effects $\xi_i$ mitigate omitted variable bias concerns and allow to focus on within-firm changes regarding MSCI membership.[119] These regression models are used to estimate the coefficients of interest: $\beta_1$ and $\gamma_1$.

### 4.1. Data description

The final sample consists of 296,843 firm-year observations covering 34,065 companies from 52 countries between 2000 and 2019. The sample is constructed to capture about 99% of the yearly aggregated market capitalization of each country which is covered in the MSCI ACWI.[120] This chapter describes the data sources, variables, and sample construction. It concludes with the summary statistics of the final sample.

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[112]See Liu et al., 2019, pp. 20-22.

[113]See Appel et al., 2016, pp. 113, 117; Bena et al., 2017, pp. 128-129; Roberts & Whited, 2013, pp. 498-504; Tian & Yang, 2021, p. 4.

[114]See Boone & White, 2015, p. 5; Cheng et al., 2019, pp. 297-298; Fisch et al., 2020, pp. 21, 51; Tian & Yang, 2021, pp. 7-8.

[115]See Bena et al., 2017, pp. 123-124, 128-130.

[116]See Appel et al., 2016, p. 121; Bena et al., 2017, p. 129; Roberts & Whited, 2013, pp. 498-504, 513.

[117]The month of a company's fiscal year end is used to determine their MSCI ACWI membership status for a given year.

[118]See Appel et al., 2016, p. 121; B. B. Francis et al., 2020, p. 46.

[119]See Bena et al., 2017, pp. 123-124, 130.

[120]Financial firms get excluded.

### 4.1.1. Data sources

The sample is constructed by merging different data sets:

- A list of companies which cover 99% of the aggregated market capitalization for each MSCI ACWI country [yearly].

- Passive ownership data [quarterly].

- MSCI World Index (MSCI WI) constituent lists [monthly].

- MSCI Emerging Markets (MSCI EM) constituent lists [monthly].

- Financial statement data [yearly].

- Foreign sales data [yearly].

- Stock price data [yearly].

The 99% company list, passive ownership data, and MSCI WI and MSCI EM constituents are provided by the Chair of Financial Management and Capital Markets of the Technical University Munich. The financial statement, foreign sales, and stock price data are drawn from Worldscope via Wharton Research Data Services (WRDS).

### 4.1.2. Variables

A list of all used variables including their definitions and sources can be found in Appendix 2. Following FactSet's recommendation, passive ownership is proxied by using ownership of funds that follow an index strategy. Therefore, $PO$ is the fraction of index fund holdings of the total market capitalization of a firm. In robustness tests two alternative definitions will be analyzed: $PO\_p13F$ and $PO\_BT$. $PO\_p13F$ covers index fund holdings plus an approximation of passively held direct holdings.[121] $PO\_BT$ is the fraction of passive fund holdings of the 'Big Three'. The used instrument is MSCI ACWI membership. $MSCI$ is a dummy variable that takes the value one, if a company is constituent of the MSCI ACWI at the month of their fiscal year end in a given year, and zero otherwise. In the following the dependent variables proxying long-term orientation and the control variables will be introduced.

*Dependent variables: Proxies for long-term orientation*
For the definition of the long-term orientation proxies, I follow Bena et al. (2017).[122] Most dependent variables described in this chapter are scaled by either total assets, net sales, or number of employees. The exact calculations can be found in Appendix 2. The focus of this thesis lays on investment input for two reasons. First, for investment output variables such as patent- or citation-based measures it's hard to acquire data, especially for a worldwide sample. Collecting, processing, and implementing data for those variables

would exceed the scope of this thesis. Second, investment input usually aims to create value in the long-run.[123] Therefore, I assume the willingness to invest is a sufficient sign of long-term orientation, independently of its outcomes.

For long-term investment in tangible and intangible assets $CAPEX + R\&D$ is used. For a more specific analysis regarding tangible and intangible assets, also the separated parts are analyzed: $CAPEX$ and $R\&D$.[124] In addition, I develop further $CAPEX + R\&D$, by calculating the future three-year average: $CAPEX + R\&D$ ($3yr\ avg.$). This allows to capture more sustained effects. To account for other long-term orientation facets, I also test for human resources and organizational measures as suggested by Brauer (2013) and Bena et al. (2017).[125] Long-term investment in human capital will be proxied by three measures. The logarithm of the number of employees log($EMPLOYEES$) measures the degree of employment. $STAFF\_COST$ measures the proportion of staff costs compared to net sales. log($AVG\_STAFF\_COST$) is the logarithm of the staff costs per employee and serves as an indicator for the relevance of high-skilled jobs and high-qualified employees. For long-term investment in organizational capital $SG\&A$ will be used.[126]

*Control variables*
To take confounding factors into account, a set of control variables will be included in the regressions. Commonly used control variables in the corporate innovation literature are based on size, age, profitability, growth opportunities, capital structure, asset tangibility, and cash. Those factors are expected to influence the innovation activities of a company.[127] I use those control variables and include additional ones, which I also expect to influence both, investment behavior and passive ownership. Most control variables described in this chapter are scaled by either total assets or net sales. The exact calculations can be found in Appendix 2.

I control for the standard factors like size ($SALES$), firm age ($AGE$)[128], profitability ($ROA$), growth opportunities ($TOBIN\ Q$), capital structure ($LEVERAGE$), and asset tangibility ($TANGIBILITY$).[129] Additionally, the fraction of foreign sales is included ($FOREIGN$) because export-oriented firms might be more innovative.[130] Cash holdings ($CASH$) and free cash flow ($FCF$) are controlled for because liquidity could foster investment activities.[131] Insider ownership ($INSIDER$) is included, because with higher insider holdings the managers' incentives to carry out long-

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[121] The underlying assumption is that an investment company's unknown passively-managed ratio of their direct holdings is similar to the one of their fund holdings.

[122] See Bena et al., 2017, p. 144.

[123] See Lee & O'Neill, 2003, p. 214, Lerner & Wulf, 2007, p. 634.

[124] See Bena et al., 2017, p. 125.

[125] See Bena et al., 2017, p. 126; Brauer, 2013, pp. 389-392.

[126] See Bena et al., 2017, p. 126.

[127] See Bena et al., 2017, p. 128; Liu et al., 2019, p. 9; Luong et al., 2017, p. 1458; Tian & Yang, 2021, p. 12.

[128] I use date of incorporation instead of date of founding, because of much better data availability in Worldscope.

[129] See Bena et al., 2017, p. 128; Liu et al., 2019, p. 9; Luong et al., 2017, p. 1458; Tian & Yang, 2021, p. 12.

[130] See Bena et al., 2017, p. 128; Luong et al., 2017, p. 1458.

[131] See Bena et al., 2017, p. 128.

term investments might change.[132] For the regressions with CAPEX- or R&D-based dependent variables, I follow Bena et al. (2017) and add the logarithm of the capital-to-labor ratio ($CAPITAL/LABOR$).[133] In the regressions with a R&D-based dependent variable a dummy variable $D(R\&D)$ which marks all entries with missing values for R&D is included.[134] Finally, the logarithm of the float-adjusted market capitalization at the end of the fiscal year ($FLOAT$) is added, to take the variable that affects index addition and deletion into account.[135]

There will be two models for every dependent variable. Structure-wise one model follows Bena et al. (2017). In the other model additional control variables will be added. In Figure 1 the different configurations are shown.

### 4.1.3. Sample construction and data pre-processing

Getting the data: The sample construction starts with the data set that contains all firms covering the 99% aggregated market capitalization per country and year (in the following: '99% company data'). As in related research, financial firms are excluded because the higher regulation in the financial sector might affect the results. Also, they are not directly comparable to other firms regarding firm characteristics and investment behavior.[136] First, all entries in the 99% company data with an empty value for the Worldscope Permanent ID (WS-ID) are deleted, because the WS-IDs are required for merging. By removing duplicates, a list of WS-IDs is created. Those are all companies[137] which have been in the 99% aggregated market capitalization of their country for at least one year during the sample period. For this list of WS-IDs the associated financial statement, stock price, and foreign sales data from 2000 to 2019 is retrieved from Worldscope via WRDS.

Merging: The financial statement data and the 99% company data get merged by WS-ID and year. The resulting data set consists of all companies that have at least been once in the 99% of aggregated market capitalization of their country and their financial statement data for every year from 2000 to 2019. Empty values for the 99% company data part serve as a flag that a company was not in the 99% in a specific year. Now the data set gets merged with the passive ownership data by their FactSet-ID and date. Hereby, for every company the most actual passive ownership data that is available at their financial year end is used. Then, for every firm-year observation a flag for MSCI WI or MSCI EM membership is added. This flag takes the value one if a company is member of the MSCI WI or MSCI EM in the month of their fiscal year end, and zero otherwise. Finally, the foreign sales and stock price data are merged with the data set by WS-ID and year.

Pre-processing: First, implausible values are set to not available (NA).[138] Then, a dummy variable for the firm-year observations with missing values for R&D expenses is added. The R&D expenses of those observations are set to zero.[139] Afterwards, the exchange rate at the time of the fiscal year end is calculated by dividing Net Sales [USD] by Net Sales [Local Currency (LC)].[140] This calculated exchange rate will be used for the calculation of control variables, which are neither in USD nor without currency. Then, the dependent and independent variables are calculated as described in chapter 4.1.2. The independent variables[141] get lagged by one year, so the long-term orientation variables can be regressed by characteristics from one period earlier. This takes into account that the passive investors' effect on long-term orientation takes some time.[142] Afterwards, all firm-year observations in which a company was not in the origin countries 99% for a year are excluded. Finally, following similar literature all continuous variables are winsorized to their 1% and 99% quantiles in order to limit the effect of outliers.[143]

### 4.1.4. Summary statistics and multicollinearity analysis

Table 1 shows the basic summary statistics of the final sample. Table 14 in Appendix 3 contains more detailed statistics regarding countries and years. All following statistics stem from those two tables. Passive investors hold on average a 2.0% stake of the sample firms. At the country level, firms from the United States (6.6%), Ireland (3.9%), and Brazil/Switzerland (1.9%) show the highest levels of average passive ownership. From 2000 to 2018 the yearly mean of passive ownership grew from 0.5% to 3.7%, with the United States showing the highest growth (13.0%). The United States are also the most represented country in the sample regarding the number of individual firms with 6,177 of 34,065 firms (18.1%). On average 11.3% of the sample companies belong to the MSCI ACWI. For the investment input measures, the means of the CAPEX+R&D, CAPEX and R&D to-asset-ratios are 0.074, 0.054 and 0.018, respectively. The average CAPEX-to-asset-ratio is highest for Hungary (9.7%). Also, it's similar for US (5.3%) and non-US companies (5.5%). From 2001 to 2019 the yearly average CAPEX-to-asset-ratio decreased from 5.9% to 4.4%, with Brazil showing the largest decline (-5.3%) and Argentina showing the largest growth (+3.2%). The total CAPEX of the sample amount to $35,101.8 billion. Comparing the CAPEX in 2001 to 2019 there is a 106% growth.[144] Regarding the

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[132]See Bena et al., 2017, p. 128; Luong et al., 2017, p. 1458.

[133]See Bena et al., 2017, p. 128.

[134]See Cremers et al., 2020, p. 4540.

[135]See Appel et al., 2016, pp. 120-121; Cremers et al., 2020, p. 4539; B. B. Francis et al., 2020, p. 48.

[136]See Bena et al., 2017, p. 125; Qin & Wang, 2018, pp. 15, 19-20.

[137]Excluding financial companies and entries with no WS-ID.

[138]This applies to negative values in WC7240 (Net Sales [USD]), WC1001 (Net Sales [LC]), WC3501 (Common Equity), WC8002 (Market Capitalization) and WC2501 (Property, Plant, and Equipment (PP&E)).

[139]See Bena et al., 2017, p. 125; Cremers et al., 2020, p. 4540.

[140]In Worldscope variables for the exchange rates that have been used for the financial statement conversion exist (WC18214 and WC18215). Those variables are not used due to poor data availability.

[141]Including the MSCI ACWI flag and the passive ownership variables.

[142]See Bena et al., 2017, p. 129; Dong & Eugster, 2017, pp. 16-17.

[143]See Aguilera, Desender, Lamy, & Lee, 2017, p. 201; Bena et al., 2017, p. 129; Dong & Eugster, 2017, p. 19; Tian & Yang, 2021, p. 12.

[144]From $1,086.0 billion in 2001 to $2,241.8 billion in 2019.

**Figure 1:** Model overviews.

| Dependent variables: | Investment input measures* | | Human capital and organizational measures** | |
|---|---|---|---|---|
| **Independent Variables:** | Model: | | Model: | |
| | Full | Bena | Full | Bena |
| PO / MSCI | x | x | x | x |
| log(SALES) | x | x | x | x |
| TOBIN Q | x | x | x | x |
| LEVERAGE | x | x | x | x |
| TANGIBILITY | x | x | x | x |
| CASH | x | x | x | x |
| FCF | x | x | x | x |
| INSIDER | x | x | x | x |
| FOREIGN | x | x | x | x |
| log(CAPITAL/LABOR) | x | x | | |
| log(AGE) | x | | x | |
| ROA | x | | x | |
| log(FLOAT) | x | | x | |
| D(R&D) | x*** | | | |

\* Includes: CAPEX+R&D / CAPEX+R&D (3yr avg.) / CAPEX / R&D

\*\* Includes: log(EMPLOYEES) / STAFF_COST / log(AVG_STAFF_COST) / SG&A

\*\*\* Only for the R&D-based dependent variables

R&D to-asset-ratio the United States have the highest mean (4.5%). The average for non-US companies (1.3%) is considerably lower. From 2001 to 2019 the yearly mean R&D to-asset-ratio did stay constant (2.1%), with South Korea showing the largest increase (+2.1%) and Canada showing the largest decrease (-1.4%). The total R&D expenses of the sample amount to \$6,607.6 billion. Comparing the R&D expenses in 2001 to 2019 there is a 142% growth.[145]

For a reasonable inference, one must consider the degree of multicollinearity. Multicollinearity arises if at least two of the independent variables are heavily correlated. This leads to larger variances of the regression coefficients and therefore to lower significances. If the degree of multicollinearity is high, reasonable inference of the regression coefficients is not possible. The Pearson correlation coefficient can be used to check for correlation between two numeric variables. Absolute values larger than 0.8 are considered as critical. To measure correlation between several variables the variance inflation factor (VIF)[146] can be calculated. The values 5, 10, or 20 are usually considered as critical thresholds.[147] The

Pearson correlation coefficients of the sample can be found in Appendix 4 Panel A. The largest correlation coefficient is 0.74 between SALES and FLOAT. Therefore, no correlation coefficient has an absolute value larger than 0.8 and correlation between two variables seems not to be a problem. The VIFs of the independent variables can be found in Panel B. The largest VIF is 2.61 of the variable FLOAT. This is below the critical threshold of five. Therefore, multicollinearity seems to be no concern in the sample.

### 4.2. MSCI ACWI as the identification strategy

As discussed in chapter 4, I have to account for endogeneity concerns in the analysis. Exogenous variation in passive ownership due to changes in MSCI ACWI membership is used to tackle endogeneity and therefore to allow inference. In the following, the literature using the MSCI ACWI as an identification strategy is examined and the appropriateness of the MSCI ACWI as an instrument in the context of passive investors and long-term orientation is considered. Beforehand, it's important to understand how the underlying instrument and its mechanisms regarding constituents' selection and reconstitution work.

MSCI Inc. is one of the leading index providers. Their portfolio consists of various types of indices.[148] The MSCI

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[145] From \$212.2 billion in 2001 to \$317.9 billion in 2019.

[146] The VIF is defined as: $VIF_n = \frac{1}{1-R_n^2}$; with $R_n^2$ being the coefficient of determination of a regression with n as the dependent variable and all other N - 1 variables as independent variables.

[147] See Dreger, Kosfeld, & Eckey, 2014, pp. 69-76; Gujarati & Porter, 2009, pp. 327-328, 338, 340; Midi, Sarkar, & Rana, 2010, pp. 255-256, 258-259; Sheather, 2009, pp. 202-203; Shrestha, 2020, pp. 40-41.

[148] See Hau, Massa, & Peress, 2010, pp. 1687-1688; MSCI Inc., 2021c, p. 12.

**Table 1:** Summary Statistics.

Basic summary statistics for all variables used in the main regression analyses. Variables are defined and constructed as described in chapter 4.1.2 and 4.1.3. All non-binary variables are winsorized to their 1% and 99% quantiles.

| Statistic | N | Mean | Median | St. Dev. | Min | Max |
|---|---|---|---|---|---|---|
| PO | 222,196 | 0.020 | 0.003 | 0.037 | 0.000 | 0.196 |
| PO_p13F | 222,212 | 0.029 | 0.004 | 0.055 | 0.000 | 0.260 |
| PO_BT | 222,169 | 0.013 | 0.0003 | 0.027 | 0.000 | 0.146 |
| MSCI | 285,264 | 0.113 | 0.000 | 0.317 | 0.000 | 1.000 |
| CAPEX+R&D | 293,863 | 0.074 | 0.051 | 0.076 | 0.0002 | 0.428 |
| CAPEX+R&D (3yr avg.) | 244,222 | 0.073 | 0.054 | 0.068 | 0.001 | 0.384 |
| CAPEX | 293,863 | 0.054 | 0.035 | 0.059 | 0.0001 | 0.328 |
| R&D | 296,195 | 0.018 | 0.000 | 0.045 | 0.000 | 0.286 |
| EMPLOYEES | 248,125 | 7,120 | 1,602 | 17,512 | 14 | 123,149 |
| STAFF_COST | 175,755 | 0.177 | 0.108 | 0.263 | 0.004 | 2.147 |
| AVG_STAFF_COST [$K] | 140,924 | 37.232 | 22.537 | 43.070 | 0.846 | 281.593 |
| SG&A | 258,358 | 0.321 | 0.165 | 0.746 | 0.015 | 6.465 |
| SALES [$M] | 284,522 | 1,712.4 | 284.1 | 4,736.5 | 0.000 | 34,360.9 |
| AGE | 253,790 | 28.3 | 20.0 | 24.5 | 0.0 | 110.0 |
| ROA | 282,004 | 0.091 | 0.095 | 0.123 | −0.525 | 0.404 |
| TOBIN Q | 266,113 | 1.887 | 1.356 | 1.590 | 0.533 | 10.463 |
| LEVERAGE | 283,936 | 0.218 | 0.190 | 0.190 | 0.000 | 0.804 |
| TANGIBILITY | 283,685 | 0.310 | 0.270 | 0.228 | 0.002 | 0.899 |
| CASH | 284,112 | 0.184 | 0.125 | 0.181 | 0.001 | 0.867 |
| FCF | 272,036 | 0.002 | 0.025 | 0.143 | −0.767 | 0.281 |
| CAPITAL/LABOR [$K] | 234,446 | 276.1 | 58.1 | 863.8 | 1.8 | 6,692.4 |
| INSIDER | 225,725 | 0.411 | 0.415 | 0.265 | 0.000 | 0.963 |
| FOREIGN | 203,895 | 0.248 | 0.086 | 0.349 | 0.000 | 1.653 |
| FLOAT [$M] | 219,145 | 1,559.7 | 219.5 | 4,669.6 | 4.4 | 34,792.8 |
| D(R&D) | 296,843 | 0.492 | 0.000 | 0.500 | 0.000 | 1.000 |

ACWI is one of their flagship indices. It focuses on large- and mid-cap equities from 23 developed and 27 emerging markets. It's a combination of their MSCI WI (developed markets) and their MSCI EM Index (emerging markets).[149] Figure 2 shows the structure and composition of the MSCI ACWI.

The MSCI ACWI aims to represent the global equity market in an appropriate, fair, and investable manner. In theory a full market index that consists of all stocks would replicate the market perfectly. Due to liquidity constraints and high turnover costs, this is practically not feasible.[151] Therefore, the index covers about 85% of all global investable equities. As of October 2021, there are 2,979 constituents in total. On the country level, US-based equities are the dominating constituents with more than half of the total market capitalization of the MSCI ACWI. On the sector level, information technology is the most represented sector with a share of 22.33%.[152] The construction of their indices is based on the 'MSCI global investable market indexes' methodology,

which focuses on liquidity and replicability. This methodology is published by MSCI to diminish concerns regarding transparency and independence.[153] The index construction is very complex. On the top-line it consists of the following steps:

- "Defining the Equity Universe for each Market.

- Determining the Market Investable Equity Universe for each Market.

- Determining market capitalization size-segments for each Market.

- Applying Index Continuity Rules for the Standard Index.

- Classifying securities under the Global Industry Classification Standard (GICS).

- Using a building block approach, Regional and Composite Indexes can be created from the individual Market Indexes for each size-segment. ..."[154]

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[149]See MSCI Inc., 2021b.
[150]Taken from MSCI Inc., 2021b.
[151]See Hau et al., 2010, p. 1688, MSCI Inc., 2021a, pp. 1-3.
[152]See MSCI Inc., 2021a, pp. 1-3.

[153]See Hau et al., 2010, p. 1688, MSCI Inc., 2021a, p. 3.
[154]MSCI Inc., 2021c, p. 14.

**Figure 2:** Structure and composition of the MSCI ACWI.[150]



Simplified, the index construction for the MSCI ACWI is based on covering about 85% of the float-adjusted market capitalization in each country's investable equity universe. The float-adjusted market capitalization is the market capitalization of the actual available shares. For example, shares held by governments, companies, board members, or employees are classified as non-available shares. For each country, the stocks are sorted in descending order by their float-adjusted market capitalization. Then, they are added until 85% coverage of aggregated float-adjusted market capitalization for a country is reached.[155] For an appropriate representation of the equity market, MSCI must account for developments and changes in the equity universe. They do so by reviewing the index regularly and if necessary, they include or exclude constituents. These reviews take place quarterly (February, May, August, and November) with a comprehensive rebalancing carried out semi-annually (May and November). Hereby, the reviews in February and August are less extensive and it must be weighted if the timely adaption or a lower index turnover is more important. For event-driven changes (e.g., acquisitions), the adjustment takes place directly. MSCI has to announce the results of the quarterly and semi-annually reviews at least two weeks upfront.[156]

### 4.2.1. MSCI ACWI in the literature

A non-comprehensive review of existing literature that uses the MSCI ACWI as an identification strategy can be found in Appendix 5. To my best knowledge there is no literature yet which uses the MSCI ACWI as an instrument for passive ownership. While it's mostly applied in an IV approach, there is also literature that uses MSCI ACWI additions in a Difference-in-Differences analysis. Within an IV approach, it's mostly applied to instrument for foreign institutional ownership. Nevertheless, there are also studies in which it's used to instrument for institutional investors and price informativeness. The instrument itself is usually a dummy for MSCI ACWI membership in a given year. Most studies include either firm or industry fixed effects and combine them with year and/or country fixed effects. Often different models with varying combinations are created. Literature applying the MSCI ACWI as an identification strategy often investigates a worldwide sample, but some use it also for individual countries.[157] Bena et al. (2017), Luong et al. (2017), and Shin and Park (2020) study foreign ownership and long-term orientation. In their IV approaches they use MSCI ACWI membership to instrument for foreign owner-

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[155]See Bena et al., 2017, pp. 124, 129-130; Hau et al., 2010, p. 1691; MSCI Inc., 2021c, pp. 26-28.

[156]See Bena et al., 2017, pp. 124, 129-130; Hau et al., 2010, pp. 1688-1689; MSCI Inc., 2021a, pp. 1-3; MSCI Inc., 2021c, pp. 38-81.

[157]See Aggarwal, Erel, Ferreira, & Matos, 2011, pp. 174-176; Aguilera et al., 2017, pp. 201, 214-215; Bena et al., 2017, pp. 124, 128-132; Dyck, Lins, Roth, & Wagner, 2019, pp. 701-702, OB3-OB4; M. A. Ferreira & Matos, 2008, pp. 517, 520-521, 531; Kacperczyk, Sundaresan, & Wang, 2021, pp. 1319, 1334-1338; Luong et al., 2017, pp. 1452-1453, 1470-1471; Shin & Park, 2020, p. 9; Pereira da Silva, 2018, pp. 4, 21.

ship. They argue that the MSCI indices belong to the most common benchmarks by foreign institutional investors and therefore foreign investors adapt to index reconstitutions. Regarding long-term orientation they argue that index inclusion is based on mainly mechanical rules. Therefore it should not directly affect long-term orientation, especially after controlling for index-inclusion relevant variables.[158] Their argumentation regarding the instrument's suitability in the long-term orientation context is transferable to this thesis. Bena et al. (2017) utilize the MSCI ACWI in an additional way as an instrument. In a robustness test they limit their sample to the 10% bandwidth of the number of companies around the country-year threshold for index inclusion. This approach allows a similar environment as the Russell 1000/2000 cut-off which is often used in the literature. This leads to the sample consisting of more similar firms and quasi-random index inclusion, allowing better comparability between included and non-included companies. Their results are similar to those of their full sample.[159]

### 4.2.2. Requirements & suitability

A suitable instrument must satisfy two conditions: The relevance condition and the exclusion restriction.[160] The relevance condition requires the instrument to have an effect on the endogenous instrumented variable after controlling for all other exogenous variables. The satisfaction of this condition is testable. Looking at the first stage of the 2SLS regression in chapter 4, a $\gamma_1$ which is significantly different from zero satisfies the relevance condition. To test the relevance condition, one should use the F-statistic, which is the squared t-statistic in the single-instrument case. Hereby, a F-statistic above 10 in the first stage indicates a strong instrument. Meanwhile, the exclusion restriction requires the covariance of the instrument and the error-term of the OLS regression to be zero: $cov(MSCI, \epsilon) = 0$. If the exclusion restriction holds, the only influence the instrument has on the dependent variable is through its effect on the instrumented variable. The exclusion restriction cannot be tested. Therefore it should be conclusively argued why the exclusion restriction is expected to hold.[161] In this thesis, membership to the MSCI ACWI is used to instrument for passive ownership. I expect the relevance condition to hold, because passive institutional investors need to comply with changes in the index to minimize tracking error.[162] Existing research already documented that MSCI ACWI membership is affecting foreign ownership due to foreign investors heavily benchmarking the MSCI ACWI.[163] Compared to foreign ownership, the

effect on passive ownership should be even stronger, because the business model of passive investors forces them to minimize tracking error. In chapter 4.3.2 this assumption gets confirmed. The results of the first stages suggest a positive association between MSCI ACWI inclusion and passive ownership. With a F-Statistic above 10, MSCI ACWI membership seems to be a strong instrument in the passive investor context. I also expect the exclusion condition to hold. Additions and exclusions to the index follow a mainly[164] mechanical rule based on float-adjusted market capitalization. Therefore, I do not see how index membership should influence long-term orientation directly, especially after controlling for the variable affecting index membership and index weights: Float-adjusted market capitalization.[165] Additionally, Bena et al. (2017) argue that the MSCI ACWI represents a major part of a country's investable equities, meaning stocks are added as soon as they become a relevant part of the investable equity universe and not because of firm-specific factors such as expected long-term orientation.[166]

### 4.3. Results

In the following, the results of the regression analyses are presented. This includes the results of the baseline OLS regressions, the two stages of the 2SLS regressions, and several robustness tests. In Table 2 the results of the main analyses are summarized. The detailed regression tables can be found in Appendix 6, 7, and 8. All coefficient interpretations in the following chapters are 'ceteris paribus' interpretations.

### 4.3.1. Baseline regressions

The main results of the OLS regressions are shown in the sections 'OLS: Full Model' and 'OLS: Bena Model' of Table 2. The detailed regression tables that include the coefficients of the control variables are shown in Appendix 6. In general, the results support the hypothesis that passive investors have a positive impact on the long-term orientation of their portfolio firms. This is in line with the majority of literature discussed in chapter 2.3.2. Column (1) of Table 2 suggests a positive and significant association between passive ownership and combined CAPEX and R&D investment for both tested models. A 1% increase in passive ownership is associated with a 0.00055 and 0.00058 increase in scaled-to-asset investment in tangible and intangible assets, which is 0.74% and 0.78% of its sample mean. The results for the future three-year average of combined CAPEX and R&D expenses in column (2) are similar. A 1% increase in passive ownership is related to a 0.00054 and 0.00056 increase of the future three-year average of investment in tangible and intangible assets, which is 0.74% to 0.77% of its sample mean. In column (3) and (4) CAPEX and R&D expenses are analyzed individually.

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[158]See Bena et al., 2017, pp. 128-130; Luong et al., 2017, pp. 1452-1453, 1470-1471; Shin & Park, 2020, p. 9.

[159]See Bena et al., 2017, pp. 124, 132.

[160]See Roberts & Whited, 2013, p. 511-512.

[161]See Bena et al., 2017, pp. 130-131; Cameron & Miller, 2015, p. 352; Roberts & Whited, 2013, pp. 511-515.

[162]See Bebchuk & Hirst, 2019, pp. 2043-2044; Schmidt & Fahlenbrach, 2017, p. 286; Tian & Yang, 2021, p. 4.

[163]See Bena et al., 2017, pp. 130-131; Luong et al., 2017, pp. 1470-1471; Shin & Park, 2020, p. 9.

[164]As discussed in chapter 4.2 the construction and rebalancing of MSCI indices is a complex process. Nevertheless, float-adjusted market capitalization can be seen as the fundamental criterion.

[165]See Bena et al., 2017, p. 130; B. B. Francis et al., 2020, pp. 36, 48; Schmidt & Fahlenbrach, 2017, p. 292; Shin & Park, 2020, p. 9.

[166]See Bena et al., 2017, p. 130.

**Table 2:** Summary of results: OLS and IV regressions.

For both regression types, two models as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 6, 7, and 8. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **OLS: Full Model** | | | | | | | | |
| PO | 0.055*** | 0.054*** | 0.042* | 0.014** | 0.749** | 0.030 | -1.971** | 0.026 |
| | (0.018) | (0.017) | (0.022) | (0.006) | (0.277) | (0.072) | (0.711) | (0.112) |
| Observations | 124,616 | 99,895 | 124,616 | 124,753 | 123,922 | 90,631 | 74,127 | 128,290 |
| **OLS: Bena Model** | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **IV: Full Model** | | | | | | | | |
| PO(fit) | -0.054 | -0.086 | -0.058 | 0.008 | 5.402*** | 0.867** | 1.060 | 1.450** |
| | (0.084) | (0.077) | (0.059) | (0.046) | (1.342) | (0.378) | (2.820) | (0.546) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 124,616 | 99,895 | 124,616 | 124,753 | 123,922 | 90,631 | 74,127 | 128,290 |
| **IV: Bena Model** | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: *p<0.1; **p<0.05; ***p<0.01

The magnitudes and significances of the coefficients indicate that the positive effect of passive ownership on long-term investment is rather driven by CAPEX than R&D. In column (3) both models have a positive and significant coefficient for passive ownership. A 1% increase in passive ownership is associated with an increase of 0.00042 and 0.00055 in scaled-to-assets CAPEX, which represents 0.78% and 1.02% of its sample mean. For scaled-to-assets R&D expenses, the results of both models in column (4) are different. While passive ownership is positively related with scaled-to-assets R&D expenses in the full-specification, for the model based on only Bena et al. (2017) control variables there seems to be no relation. In columns (5), (6), and (7) the results for the human capital-based measures are displayed. For the number of employees in column (5), the coefficient of passive ownership is positive and significant for both models. A 1% change in passive ownership is associated with an increase in employment by 0.75% and 1.29%, respectively. For scaled-to-sales staff costs in column (6), there is no evidence for an effect of passive investors. Column (7) and (8) show the results for average staff costs and scaled-to-sales SG&A expenses as

the dependent variables. The coefficients for passive ownership on the logarithm of average staff costs are negative and significant for both models. A 1% increase in passive ownership is related to a decrease in the average staff costs per employee by 1.97% and 1.60%, respectively. This indicates that passive investors foster low-qualification jobs and lower wages.[167] The decreasing wage level might relate to the increasing employee number, if the new employees' wage is below the firm's average. For investment in organizational capital in column (8), no effects of passive investors can be identified.

The results of the OLS regressions suggest that passive investors influence certain long-term orientation facets. While their effects on investment input and number of employees seem to be positive, the average wage level is affected negatively. For staff costs and investment in organizational capital, no effect can be identified.

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[167]See Bena et al., 2017, p. 126.

### 4.3.2. Two stage least squares regressions

Due to endogeneity concerns, the inference of the OLS results from chapter 4.3.1 may not hold. To address these concerns, an IV approach as described in chapter 4 is implemented. The first stages of the 2SLS regressions support the appropriateness of the MSCI ACWI as an instrument for passive ownership. This is in consonance with hypothesis 1 of this thesis. The second stages show that endogeneity affects the results of the baseline regressions. The results of the second stages strengthen hypothesis 3 of this thesis, regarding passive investors' positive impact on human and organizational capital. Hypothesis 2 is only partially supported.

*First stages*

Appendix 7 shows the first stages of the 2SLS regressions. Based on the first stages, hypothesis 1 of this thesis can be tested. For every model the regression coefficient of passive ownership is positive and significant. The coefficients range from 0.011 to 0.013. This suggests that passive investors increase their holdings in firms, after they get included to the MSCI ACWI, by 1.1% to 1.3%. This effect is economically significant, considering this implies a 55% to 65% change compared to the sample mean of passive ownership (2.0%). The F-statistics of all models are far above the threshold of 10, which is used by literature to determine weak instruments.[168] Therefore, MSCI ACWI membership seems to be a strong instrument for passive ownership. The results of the first stages verify the relevance condition of the MSCI ACWI as an instrument for passive ownership. They support hypothesis 1 of this thesis regarding the positive effect of MSCI ACWI affiliation on passive ownership.

*Second stages*

The sections 'IV: Full Model' and 'IV: Bena Model' of Table 2 show the results for the second stages of the 2SLS regressions. The results suggest that the outcome of the baseline regressions from chapter 4.3.1 were subject to endogeneity. Therefore, plausible inference of the baseline results is not possible.[169] After instrumenting passive ownership by MSCI ACWI membership, the results for the investment input measures as the dependent variables seem to generally lose their significance. Meanwhile, the results for the human and organizational capital measures gained significance. The described effects of passive ownership in this chapter stem from exogenous variation. Columns (1) and (2) show that the passive ownership coefficients for both combined measures of CAPEX and R&D lost their significance for all models. Passive investors seem not to affect the combined long-term investment in tangible and intangible assets. The results of the individual components in columns (3) and (4) also change. For R&D, both models are insignificant. Therefore, I find no evidence that passive investors foster investment in R&D activities. For CAPEX the model with the Bena-specification of

control variables is still positive and significant. A 1% increase in passive ownership is associated with an increase in scaled-to-assets CAPEX by 0.00126, which is 2.33% of its sample mean. It must be noted that this effect could be driven by omitting control variables, because for the model with the full-specification, the coefficient for passive ownership lost significance, while ROA and FLOAT are strongly significant. In general, the measures for investment in tangible and intangible assets seem to have lost its significance, after instrumenting for passive ownership by MSCI ACWI membership. This indicates that reverse causation is a problem in the 'passive investor' context and therefore passive investors tend to prefer firms with better investment input expectations. Other explanations for the occurrence of endogeneity could be omitted variables or measurement errors.[170] The human capital-based measures and the organizational capital measure behave similarly. In columns (5) and (6) the results for the number of employees and scaled-to-sales staff costs are displayed. The passive ownership coefficients regarding the logarithm of the number of employees are still positive and significant for both models. Interestingly, the magnitude of the coefficients is now considerably higher compared to the baseline results. A 1% increase in passive ownership is related to a 5.4% and 15.6% increase in the number of employees. This indicates that passive investors heavily increase the number of employees in their portfolio companies. For the scaled-to-sales staff costs, the coefficients are now positive and significant. A 1% increase in passive ownership is associated with an increase in scaled-to-sales staff costs by 0.00867 and 0.00626, which is 4.90% and 3.54% of its sample mean. In columns (7) and (8) the results for the average staff costs and scaled-to-sales SG&A expenses can be seen. For the logarithm of average staff costs, both models changed signs and lost their significance for the passive ownership coefficients. Therefore, unlike the baseline regressions suggested the 2SLS regressions deliver no evidence that passive investors foster low-skilled jobs. Regarding SG&A expenses, the results indicate that passive investors promote investment into organizational capital. Compared to the baseline regressions the passive ownership coefficients for both models are significant. A 1% increase in passive ownership is associated with an increase in scaled-to-sales SG&A expenses by 0.01450 and 0.01361, which is 4.52% and 4.24% of its sample mean.

The results of the second stages of the 2SLS regressions support hypothesis 3 of this thesis. Passive investors seem to encourage investment in human and organizational capital. There is only slight evidence that they foster CAPEX, and no evidence for R&D activities. This is contrary to the findings of the majority of the literature. Those differences might stem from the used sample, which consists of more recent data and more diverse firms (size-wise and country-wise) than the often-used Russell 1000/2000 setting. The results also express the urgency to account for endogeneity in the 'passive investors' research.

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[168] See Bena et al., 2017, pp. 130-131.
[169] See Roberts & Whited, 2013, p. 494.

[170] See Roberts & Whited, 2013, pp. 498-504.

### 4.3.3. Robustness tests

The following analyses will be performed to investigate the robustness of the main results from chapter 4.3. Those robustness test address: the results' comparability between long-term orientation measures, country and market type analyses, size groups, alternative passive ownership definitions, a bandwidth analysis, alternative lagging periods, and additional control variables. Due to reasons of comprehensibility, most analyses are built following the Bena-specification for the OLS and IV regressions. In the chapters themselves summary tables will be presented. Detailed regression tables including the coefficients for all control variables can be found in the appendix. Unless otherwise stated the following coefficient interpretations focus on the IV estimations. Therefore, the described effects of passive ownership stem from exogenous variation.

*Analysis with same amount of observations*

In chapter 4.3, the effect of passive ownership on different long-term orientation measures have been tested. In Table 2, the number of observations of the models differ depending on the included control variables and the long-term orientation measure. To lose as little data as possible, only the observations which have missing values in variables that are used in a model have been excluded. For a comparison of the effect of passive ownership between the different long-term orientation measures, a uniformly sample is needed. Therefore, I will use the sample data and exclude all observations which have missing values in the dependent or independent variables. This allows to repeat the regressions with the same number of observations for all models and long-term orientation measures. The reduced sample consists of 46.363 observations. The detailed regression tables including the coefficients for all control variables can be found in Appendix 9. Table 3 presents the consolidated results.

In the OLS models the coefficients of passive ownership for the four investment input measures in columns (1) to (4) lose their significance. For the human and organizational capital measures in columns (5) to (8), the results are robust to the ones of the total sample. For the IV models, the positive and significant coefficient of passive ownership for the CAPEX model following the Bena-specification is lost. Also, for the staff cost model both IV models lost significance for passive ownership. The positive effect of passive ownership on the number of employees still holds for both models. Also, the effect of passive investors on firms' scaled-to-sales SG&A expenses is still robust for the smaller sample.

The generally decreased levels of significance might be explained by the lower number of observations, which leads to larger standard errors.[171] In summary, the effect of passive ownership is most robust for the results of the human and organizational capital measures. This supports the IV results from the main analysis that suggest that passive investors rather impact human and organizational capital measures of long-term orientation, than investment in tangible and intangible assets. It should also be noted that the results of the IV regressions seem to be more robust regarding the reduced sample compared to those of the OLS regressions.

*Analysis by country*

Empirical evidence suggests that long-term orientation facets like innovation are strongly dependent on a country's culture and its equity market development.[172] Therefore, this section aims to understand whether the main results from chapter 4.3 are driven by specific countries. Because US stocks represent a major part of the total sample, separate analyses for US and non-US firms will be conducted. For globally important markets such as Germany, China, Japan, and Great Britain, additional analyses will be performed. Because existing research mainly focuses on US firms, this section might help to explain the differences of the main results compared to literature.

Table 4 shows that the main results are clearly not driven by US stocks. Surprisingly, for US stocks the MSCI ACWI seems not to be an appropriate instrument for passive ownership. This might be explained by a better predictive ability of the mostly US-based investment sponsors. In their home market they could be able to better predict future constituents and therefore act in advance to minimize transaction costs. It should be noted that the low observation numbers for the wage-based measures in columns (6) and (7) are not surprising, because wage data is less likely to be reported in the US.[173] For non-US stocks the MSCI ACWI fulfils the relevance condition. The results indicate that passive investors strongly influence their non-US portfolio companies regarding human and organizational capital. Compared to the results from the main analysis instead of CAPEX the combined investment input seems to increase with higher levels of passive ownership. At least for non-US companies the results support all three hypotheses of this thesis. For the sample limited to German firms, I find that only scaled-to-sales staff costs are affected by passive ownership. The coefficient's sign is now negative compared to the positive sign from the main analysis. This suggests that German firms reduce staff costs if passive ownership increases. This might weaken long-term orientation. For Chinese firms, a positive effect of passive ownership on investment input can be identified. Also, the number of employees and their average wage increases with higher levels of passive ownership. Japanese firms seem to be less influenced by passive investors. Only the scaled-to-sales staff costs are positively affected by higher passive ownership. For Great Britain, the investment input measures and number of employees are positively affected by passive investors.

The impact of passive investors differs depending on the firms' countries of origin. This might be explained by regulatory or cultural differences. Overall, the results indicate a positive effect of passive investors on the long-term orienta-

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[171]See Foster, Stine, & Waterman, 1998, p. 91.

[172]See Acharya & Subramanian, 2009, p. 4986; Brown, Martinsson, & Petersen, 2013, p. 1542; Hsu, Tian, & Xu, 2014, p. 133.
[173]See Bena et al., 2017, p. 140.

**Table 3:** Summary of results: Same amount of observations.

For both regression types, two models as defined in chapter 4.1.2 are built. For all variables used in those models, the observations with NAs have been excluded. This allows to analyze the same number of observations in all models. Detailed regression tables can be found in Appendix 9. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Full Model | | | | | | | | |
| PO | 0.055*** | 0.054*** | 0.042* | 0.014** | 0.749** | 0.030 | -1.971** | 0.026 |
| | (0.018) | (0.017) | (0.022) | (0.006) | (0.277) | (0.072) | (0.711) | (0.112) |
| Observations | 124,616 | 99,895 | 124,616 | 124,753 | 123,922 | 90,631 | 74,127 | 128,290 |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| IV: Full Model | | | | | | | | |
| PO(fit) | -0.054 | -0.086 | -0.058 | 0.008 | 5.402*** | 0.867** | 1.060 | 1.450** |
| | (0.084) | (0.077) | (0.059) | (0.046) | (1.342) | (0.378) | (2.820) | (0.546) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 124,616 | 99,895 | 124,616 | 124,753 | 123,922 | 90,631 | 74,127 | 128,290 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **Same amount of observations** | | | | | | | | |
| OLS: Full Model | | | | | | | | |
| PO | 0.023 | -0.003 | 0.031 | -0.007 | 1.294*** | 0.102 | -1.251* | 0.140 |
| | (0.035) | (0.026) | (0.031) | (0.009) | (0.439) | (0.067) | (0.629) | (0.162) |
| OLS: Bena Model | | | | | | | | |
| PO | 0.031 | -0.002 | 0.047 | -0.018* | 1.377*** | 0.098 | -1.271* | 0.162 |
| | (0.037) | (0.027) | (0.034) | (0.009) | (0.454) | (0.067) | (0.644) | (0.160) |
| IV: Full Model | | | | | | | | |
| PO(fit) | 0.021 | -0.074 | -0.055 | 0.061 | 2.717** | 0.388 | -1.842 | 1.511** |
| | (0.169) | (0.165) | (0.147) | (0.055) | (1.014) | (0.304) | (3.123) | (0.535) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.142 | -0.041 | 0.094 | 0.023 | 6.326*** | 0.644 | -1.114 | 2.495** |
| | (0.167) | (0.167) | (0.150) | (0.054) | (1.402) | (0.392) | (3.088) | (0.899) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 46,363 | 46,363 | 46,363 | 46,363 | 46,363 | 46,363 | 46,363 | 46,363 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: *p<0.1; **p<0.05; ***p<0.01

tion of their portfolio companies.

**Table 4:** Summary of results: Individual countries.

This table shows the results for different analyses based on the country-level. All OLS and IV regressions are built following the Bena et al. (2017) model as defined in chapter 4.1.2. Detailed regression tables can be found in Appendix 10. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level (for 'Non-US') and the year level (for individual countries) and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Non-US** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.050* | 0.019 | 0.054* | -0.008 | 1.605*** | -0.045 | -1.868** | -0.099 |
| | (0.026) | (0.024) | (0.028) | (0.011) | (0.489) | (0.090) | (0.731) | (0.138) |
| Observations | 102,952 | 81,082 | 102,952 | 103,110 | 102,515 | 98,110 | 80,771 | 105,599 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.190* | -0.026 | 0.147 | 0.045 | 17.224*** | 0.606** | 3.620 | 1.490*** |
| | (0.095) | (0.092) | (0.092) | (0.033) | (3.460) | (0.252) | (2.624) | (0.505) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 102,952 | 81,082 | 102,952 | 103,110 | 102,515 | 98,110 | 80,771 | 105,599 |
| **US** | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | -2.723 | -4.012 | -0.182 | -2.663 | 86.951*** | 16.119 | 1.146 | 8.278 |
| | (2.140) | (4.083) | (0.956) | (2.039) | (27.346) | (11.651) | (10.414) | (4.831) |
| Instr. strong? | No | No | No | No | No | No | No | No |
| Observations | 34,957 | 28,638 | 34,957 | 34,989 | 35,376 | 2,673 | 2,585 | 34,886 |
| **DE** | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.104 | -0.148 | -0.014 | 0.068 | 3.013 | -0.599** | -0.090 | -0.043 |
| | (0.215) | (0.157) | (0.209) | (0.138) | (2.251) | (0.211) | (1.272) | (0.505) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 3,005 | 2,484 | 3,005 | 3,009 | 3,011 | 2,821 | 2,809 | 2,818 |
| **CN** | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.680*** | 0.212 | 0.548** | 0.134** | 13.541** | 0.506 | 9.015*** | 0.268 |
| | (0.235) | (0.184) | (0.229) | (0.050) | (5.887) | (0.317) | (2.578) | (0.560) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 18,651 | 12,360 | 18,651 | 18,658 | 18,683 | 17,973 | 17,793 | 18,727 |
| **JP** | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.029 | -0.003 | 0.083 | -0.055 | 10.500 | 0.529* | 1.903 | 0.349 |
| | (0.210) | (0.158) | (0.139) | (0.096) | (6.317) | (0.285) | (1.355) | (0.451) |
| Instr. strong? | No | No | No | No | No | Yes | Yes | No |
| Observations | 23,332 | 18,923 | 23,332 | 23,338 | 23,247 | 10,731 | 10,620 | 23,117 |
| **GB** | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.351* | 0.375** | 0.195 | 0.144** | 19.257*** | 0.717 | 2.945 | 1.549 |
| | (0.172) | (0.130) | (0.161) | (0.054) | (5.365) | (0.450) | (1.848) | (1.485) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 7,230 | 5,758 | 7,230 | 7,246 | 7,347 | 6,932 | 6,868 | 5,816 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: *p<0.1; **p<0.05; ***p<0.01

*Analysis by market type*

In chapter 4.3.3 separate analyses for the most important countries have been performed. Now analyses on the market type level will be conducted. This allows to check two things. First, if the passive investors' impact on long-term orientation depends on the market type of the firms. My underlying rationale is that in developed markets the channels of engagement might also be more developed, allowing easier exertion of influence. Second, if the individual parts of the MSCI ACWI - the MSCI WI and MSCI EM - also suit as an instrument for passive ownership. This can be tested in the first stages of the IV regressions.

Table 5 presents the results of the analysis regarding the market types. As expected, the instrument is suitable for both, developed and emerging markets. This means that the MSCI WI and the MSCI EM suit as instruments for passive ownership for their specific market types. For both market types, passive investors seem to positively affect long-term orientation. Their positive effect on the number of employees and SG&A expenses is similar for developed and emerging markets. Differences occur in the type of investment input and wage-based measures. While for developed markets passive investors enhance CAPEX and average staff costs, for emerging markets they seem to focus on R&D and total staff costs.

Passive investors enhance long-term orientation in both, developed and emerging markets. As in the main analysis the most significant effects are identified for the human and organizational capital measures. Additionally, this analysis delivers evidence that the MSCI WI and MSCI EM are appropriate instruments for passive ownership.

*Analysis by size*

To discover if the portfolio companies' size affects the main results, separate analyses for two size groups will be conducted. The threshold of the sample split is determined by the rounded median market capitalization of the sample ($694 million). For better comparability of the two size groups, the median is calculated after omitting all missing values.[174] The companies' size could affect firm characteristics like management power. Therefore, I expect that there will be differences between the size groups.

The results of the IV regressions in Table 6 show differences regarding the size groups. The passive investors' effect on the number of employees seems to be driven by companies larger than the sample median. Meanwhile, their effects on scaled-to-sales SG&A expenses seem to stem from companies, which are smaller than the sample median. Regarding investment input, average wage level, and staff costs no influence of passive investors can be identified. As in chapter 4.3.3 the overall significance level might be lower due to the reduced sample size.

*Analysis by time*

Because of the extreme growth of passive investors, it seems reasonable that the magnitudes and significances of their effects on firms' long-term orientation have increased over time.[175] Their growing power and public pressure might foster their engagement. I hypothesize that the influence of passive investors is time-variant and became stronger in the recent past.

Table 7 shows that the effect of passive investors on firms' long-term orientation is varying over time. At the beginning of the sample period, they focused on investment in organizational capital by enhancing scaled-to-sales SG&A expenses. Later their impact shifted towards investment in human capital and investment in tangible and intangible assets. The positive and significant coefficients of passive ownership for the investment input models in columns (1) and (3) indicate that recently passive investors began to focus on enhancing investment input of their portfolio companies. It's also notable that the magnitude of the effects on the human capital-based measures in columns (5) and (7) increased recently. The findings of this robustness test support my assumption that the effect of passive investors on long-term orientation increased with their growth.

*Alternative definitions of passive ownership*

As described in chapter 2.1 the 'passive investors' literature uses different measures to proxy for passive ownership. In previous regressions PO was used. PO contains all holdings of funds that follow an index strategy. The main results might depend on the choice of the passive ownership proxy. Therefore, I test the two additional variables of passive ownership described in chapter 4.1.2. First, PO_p13F, which contains not only all index fund holdings, but also an investment sponsors' proportion of non-fund holdings that are expected to be passively held. Second, PO_BT, which only contains the index fund holdings of the 'Big Three'. In comparable literature researchers commonly examined the sensitivity of their analysis to alternative definitions of passive ownership. Their findings are usually robust to alternative definitions.[176] Therefore, I expect my results to be also robust to alternative measures of passive ownership.

Table 8 shows that the results for PO_p13F and PO_BT are robust to the passive ownership measure used in the main analysis. Interestingly, the magnitudes of the coefficients for the 'Big Three' passive ownership measure are consistently higher compared to those of the main analysis. This indicates that especially the 'Big Three' focus on enhancing the long-term orientation of their portfolio companies. This would be in line with their public emphasizing of long-term orientation and their role as engaged stewards.[177]

*Analysis with bandwidths*

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[174]Compared to chapter 4.3.3 the number of total observations is smaller, because the market capitalization variable, which is used for the split leads to 13 additional missing values.

[175]See Dong & Eugster, 2017, pp. 26-27.
[176]See Appel et al., 2016, pp. 132-133; Dong & Eugster, 2017, p. 26; B. B. Francis et al., 2020, p. 59.
[177]See Fink, 2014; Fink, 2015; Fink, 2016; Fink, 2017.

**Table 5:** Summary of results: Market type.

This table shows the results of separate analyses for developed and emerging markets. For the OLS and IV regressions, the models were built using the Bena-specification as defined in chapter 4.1.2. Detailed regression tables can be found in Appendix 11. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | | | | Dependent variable: | | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **DM** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.035** | 0.041** | 0.018 | 0.014** | 1.174*** | 0.005 | -0.252 | 0.089 |
| | (0.014) | (0.014) | (0.015) | (0.005) | (0.237) | (0.141) | (0.905) | (0.143) |
| Observations | 96,864 | 78,841 | 96,864 | 96,991 | 97,814 | 49,893 | 45,816 | 91,954 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.088 | 0.004 | 0.141* | -0.059 | 17.436*** | 0.514 | 2.637* | 1.308** |
| | (0.122) | (0.113) | (0.069) | (0.080) | (2.385) | (0.326) | (1.426) | (0.538) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 96,864 | 78,841 | 96,864 | 96,991 | 97,814 | 49,893 | 45,816 | 91,954 |
| **EM** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.034 | -0.006 | 0.034 | 0.003 | 2.798** | 0.146* | -0.356 | 0.263 |
| | (0.043) | (0.053) | (0.046) | (0.011) | (1.323) | (0.083) | (0.681) | (0.247) |
| Observations | 41,045 | 30,879 | 41,045 | 41,108 | 40,077 | 50,890 | 37,540 | 48,531 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.123 | -0.269 | 0.047 | 0.088** | 11.925*** | 0.780** | 3.677 | 2.095** |
| | (0.197) | (0.183) | (0.182) | (0.035) | (2.083) | (0.367) | (4.028) | (0.740) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 41,045 | 30,879 | 41,045 | 41,108 | 40,077 | 50,890 | 37,540 | 48,531 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note:*p<0.1; **p<0.05; ***p<0.01

Existing 'passive investors' literature often uses the Russell 1000/2000 setting. In this setting the sample is limited to a bandwidth of firms around the threshold of the two indices. This allows researchers to examine firms that have similar characteristics, but whose index assignment can be assumed to be random.[178] In this thesis the MSCI ACWI is used as the identification strategy. To adapt the bandwidth analysis,

I calculate for every country-year combination the threshold of index assignment. I define the threshold as the floating market capitalization of the last included stock for each country and each year.[179] For every country-year combinations'

[178]See Glossner, 2019, pp. 1-2.

[179]Hereby, I use the lagged floating market capitalization and lagged index membership. This allows me to make sure that a dependent variable in t is only explained by independent variables from t-1 for the years a firm has in fact been close to the index threshold in t-1.

**Table 6:** Summary of results: Firm size.

This table shows the results of the analysis by size group. The size threshold is defined as the sample median of market capitalization. For the calculation of the sample median, the sample excluding NAs as in chapter 4.3.3 is used. The rounded sample median is $694 million. Firm-year observations with a lower market capitalization in year t get assigned to the small group, while firm-year observations with a higher market capitalization get assigned to the large group. For both groups, the OLS and IV regressions following the Bena model as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 12. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | | | | Dependent variable: | | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **Mkt. cap. < Median** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.040 | -0.025 | 0.019 | 0.016 | 1.422*** | 0.083 | -0.834 | 0.218 |
| | (0.073) | (0.041) | (0.064) | (0.018) | (0.382) | (0.192) | (0.751) | (0.335) |
| Observations | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.706 | -0.170 | 0.228 | 0.339 | 0.771 | 2.162 | 1.660 | 6.140* |
| | (0.668) | (0.465) | (0.452) | (0.339) | (8.714) | (1.567) | (9.988) | (3.394) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 | 23,177 |
| **Mkt. cap. >= Median** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.081* | 0.055* | 0.086** | -0.011 | 0.442 | 0.081** | -0.856 | 0.198 |
| | (0.039) | (0.029) | (0.040) | (0.012) | (0.389) | (0.038) | (0.499) | (0.188) |
| Observations | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.201 | 0.025 | 0.162 | 0.019 | 5.192*** | 0.145 | -1.235 | 0.817 |
| | (0.190) | (0.178) | (0.172) | (0.040) | (1.448) | (0.233) | (3.061) | (0.507) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 | 23,173 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note:*p<0.1; **p<0.05; ***p<0.01

threshold the next 10% of firms which have a higher floating market capitalization and the next 10% that have a lower are added. Because the firms around the threshold are expected to be similar, industry and country fixed effects are included instead of firm fixed effects. This approach is similar to the one Bena et al. (2017) apply in their robustness tests. In their main analysis they also use the MSCI ACWI as an instrument with year and firm fixed effects and then perform a robustness check based on the 10% bandwidths with year, country, and industry fixed effects. Their results are not sensitive to

**Table 7:** Summary of results: Different time periods.

The analysis is conducted for three subsamples: 1. 2000-2006; 2. 2007-2013; 3. 2014-2019. For those three subsamples, the OLS and IV regressions following the model of Bena et al. (2017) as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 13. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **2000-2006** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | -0.035 | 0.032 | -0.014 | -0.013 | 1.452* | 0.245 | -0.064 | -0.035 |
| | (0.044) | (0.034) | (0.037) | (0.014) | (0.720) | (0.171) | (0.965) | (0.242) |
| Observations | 31,458 | 28,951 | 31,458 | 31,516 | 31,562 | 12,997 | 12,197 | 28,466 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | -0.243 | -0.211 | -0.064 | -0.162 | 10.704 | 2.373 | 1.049 | 3.619*** |
| | (0.562) | (0.244) | (0.436) | (0.134) | (5.655) | (1.502) | (6.210) | (0.728) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 31,458 | 28,951 | 31,458 | 31,516 | 31,562 | 12,997 | 12,197 | 28,466 |
| **2007-2013** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.071* | 0.094*** | 0.068* | 0.010 | 1.286*** | -0.120 | 0.971 | 0.188 |
| | (0.030) | (0.024) | (0.028) | (0.005) | (0.289) | (0.149) | (0.670) | (0.183) |
| Observations | 46,860 | 44,118 | 46,860 | 46,943 | 46,859 | 29,591 | 24,357 | 45,045 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.181 | 0.017 | 0.148 | 0.038 | 11.059** | -0.005 | 3.916** | 0.183 |
| | (0.182) | (0.137) | (0.179) | (0.040) | (3.024) | (0.382) | (1.319) | (0.579) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 46,860 | 44,118 | 46,860 | 46,943 | 46,859 | 29,591 | 24,357 | 45,045 |
| **2014-2019** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.044** | 0.024 | 0.044* | -0.004 | 1.456*** | 0.053 | -1.734 | -0.191* |
| | (0.014) | (0.011) | (0.017) | (0.002) | (0.223) | (0.064) | (0.866) | (0.092) |
| Observations | 59,591 | 36,651 | 59,591 | 59,640 | 59,470 | 58,195 | 46,802 | 66,974 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.488** | 0.102 | 0.500** | -0.003 | 13.733** | 0.515 | 6.566* | 1.436 |
| | (0.169) | (0.113) | (0.169) | (0.036) | (3.652) | (0.520) | (2.842) | (1.057) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 59,591 | 36,651 | 59,591 | 59,640 | 59,470 | 58,195 | 46,802 | 66,974 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: *p<0.1; **p<0.05; ***p<0.01

**Table 8:** Summary of results: Alternative passive ownership definitions.

This table shows the results for alternative measures of passive ownership. PO_13k contains not only passive fund holdings but also an index fund sponsors out-of-fund holdings which are expected to be held passively. PO_BT contains only the passive fund holdings of BlackRock, Vanguard, and State Street. For both alternative definitions, the OLS and IV regressions following the Bena model as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 14. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | | | | | Dependent variable: | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **PO_13k** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.045*** | 0.044*** | 0.040** | 0.004 | 1.280*** | -0.007 | -1.326** | -0.048 |
| | (0.015) | (0.012) | (0.018) | (0.006) | (0.134) | (0.073) | (0.613) | (0.089) |
| Observations | 137,912 | 109,723 | 137,912 | 138,102 | 137,895 | 100,786 | 83,359 | 140,488 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.068 | -0.037 | 0.096** | -0.028 | 11.544*** | 0.591** | 3.145 | 1.016*** |
| | (0.072) | (0.050) | (0.045) | (0.042) | (1.744) | (0.230) | (2.336) | (0.289) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,912 | 109,723 | 137,912 | 138,102 | 137,895 | 100,786 | 83,359 | 140,488 |
| **PO_BT** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.075** | 0.080*** | 0.067* | 0.004 | 1.617*** | 0.048 | -2.355* | -0.043 |
| | (0.028) | (0.025) | (0.034) | (0.011) | (0.247) | (0.133) | (1.203) | (0.163) |
| Observations | 137,896 | 109,708 | 137,896 | 138,086 | 137,877 | 100,770 | 83,343 | 140,475 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.121 | -0.065 | 0.169** | -0.049 | 20.542*** | 0.841** | 4.526 | 1.774*** |
| | (0.115) | (0.094) | (0.069) | (0.080) | (1.943) | (0.321) | (3.336) | (0.509) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,896 | 109,708 | 137,896 | 138,086 | 137,877 | 100,770 | 83,343 | 140,475 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note:*p<0.1; **p<0.05; ***p<0.01

this bandwidth approach.[180] Therefore, I also expect similar results compared to the main analysis.

Table 9 shows that the results are mostly similar to the main analysis. The only exceptions are the positive and significant passive ownership coefficients for scaled-to-assets

R&D in column (4) and average staff costs in column (7). Also, within the bandwidth no association between passive ownership and scaled-to-assets CAPEX can be identified. It is noteworthy that the magnitudes of the passive ownership coefficients are considerably larger compared to those of the main analysis.

Because firm fixed effects have been excluded, the results

[180]See Bena et al., 2017, pp. 132, 134.

**Table 9:** Summary of results: Bandwidth analysis.

This table shows the results for the bandwidth analysis. For each year and each country, the floating market capitalization of the last included stock in the MSCI ACWI is used as the threshold. Based on this threshold for each year and each country the 10% of the stocks that are smaller and the 10% of the stocks that are larger than that threshold are used for the bandwidth analysis. This allows to analyze stocks with similar characteristics. For the OLS and IV regressions, the models following the Bena-specification as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 15. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| **Reminder: Main analysis** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.058*** | 0.056*** | 0.055** | 0.001 | 1.288*** | -0.007 | -1.602** | -0.029 |
| | (0.019) | (0.016) | (0.023) | (0.007) | (0.184) | (0.078) | (0.719) | (0.124) |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.090 | -0.050 | 0.126** | -0.037 | 15.571*** | 0.626** | 3.362 | 1.361*** |
| | (0.087) | (0.070) | (0.054) | (0.060) | (1.949) | (0.245) | (2.483) | (0.391) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,909 | 109,720 | 137,909 | 138,099 | 137,891 | 100,783 | 83,356 | 140,485 |
| **10% bandwidth** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.035** | 0.020 | 0.008 | 0.020* | 4.680*** | 0.388*** | -1.622*** | 0.806*** |
| | (0.012) | (0.015) | (0.010) | (0.011) | (0.581) | (0.106) | (0.353) | (0.179) |
| Observations | 36,951 | 30,033 | 36,951 | 36,992 | 36,652 | 27,187 | 22,565 | 37,514 |
| | | | | | | | | |
| IV: Bena Model | | | | | | | | |
| PO(fit) | 0.238 | 0.296 | -0.231 | 0.448* | 54.186*** | 3.097*** | 7.655*** | 13.073*** |
| | (0.187) | (0.171) | (0.138) | (0.221) | (18.697) | (0.841) | (1.596) | (3.214) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 36,951 | 30,033 | 36,951 | 36,992 | 36,652 | 27,187 | 22,565 | 37,514 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

of this robustness test might be able to show the more sustained effects of an increase in passive ownership. Instead of focussing solely on index switchers, the exclusion of firm fixed effects allows the regressions to consider all firms. This allows to capture a broader and more sustained variation in passive ownership.[181]

*Analysis with alternative lagging periods*

In all previous regressions the long-term orientation measures in year t were explained by lagged passive ownership, MSCI ACWI membership, and control variables from the year t-1. One could argue that changes in the ownership structure take more time to show effect. The inclusion of the CAPEX+R&D (3yr avg.) variable already considered those

concerns to some extent. Compared to CAPEX+R&D the results have been similar. Therefore, I do not expect large effects to take place much later than one period after a change in passive ownership. Nevertheless, I want to check, if using alternative lagging periods significantly changes the results. The conducted regressions are based on lagging periods of two, three, and five years.

Table 10 indicates that the long-term effects of passive ownership rather diminish investment input. Meanwhile, human and organizational capital investment seems to remain positively affected. Especially for number of employees the coefficient for passive ownership is positive and significant for all tested lagging periods.

Interpreting this analysis, it must be considered that between the index inclusions in years t-2, t-3, and t-5 and the value of the dependent variables in year t unobserved

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[181] See Appel, Gormley, & Keim, 2020, pp. 26-27.

**Table 10:** Summary of results: Alternative lagging periods.

This table shows the results of the analysis with alternative lagging periods for the independent variables. In the main analysis in chapter 4.3 the independent variables were lagged by one period. Three alternative lagging periods are tested: two periods, three periods and five periods. For those three alternative lagging periods, the OLS and IV regressions following the Bena model as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 16. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| **Two periods** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.054*** | 0.050*** | 0.046** | 0.003 | 1.297*** | -0.006 | -1.347* | -0.092 |
| | (0.015) | (0.016) | (0.019) | (0.008) | (0.182) | (0.068) | (0.758) | (0.073) |
| Observations | 122,559 | 96,369 | 122,559 | 122,754 | 121,507 | 88,561 | 72,985 | 124,207 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | -0.049 | -0.162** | -0.002 | -0.038 | 11.680*** | 0.204 | 3.381 | 0.607* |
| | (0.072) | (0.071) | (0.066) | (0.055) | (1.501) | (0.233) | (2.164) | (0.335) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 122,559 | 96,369 | 122,559 | 122,754 | 121,507 | 88,561 | 72,985 | 124,207 |
| **Three periods** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.044** | 0.039** | 0.033* | 0.009 | 1.305*** | -0.015 | -0.830 | -0.120* |
| | (0.016) | (0.016) | (0.019) | (0.008) | (0.218) | (0.070) | (0.696) | (0.058) |
| Observations | 108,397 | 83,273 | 108,397 | 108,585 | 106,289 | 77,278 | 63,279 | 109,099 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | -0.172** | -0.252*** | -0.113 | -0.041 | 9.407*** | 0.090 | 3.446 | 0.074 |
| | (0.076) | (0.072) | (0.078) | (0.064) | (1.347) | (0.198) | (2.160) | (0.302) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 108,397 | 83,273 | 108,397 | 108,585 | 106,289 | 77,278 | 63,279 | 109,099 |
| **Five periods** | | | | | | | | |
| OLS: Bena Model | | | | | | | | |
| PO | 0.013 | 0.012 | 0.007 | 0.006 | 1.284*** | 0.0001 | -0.620 | -0.226** |
| | (0.019) | (0.023) | (0.020) | (0.008) | (0.304) | (0.070) | (0.725) | (0.082) |
| Observations | 82,005 | 63,029 | 82,005 | 82,145 | 79,436 | 56,693 | 46,461 | 81,469 |
| IV: Bena Model | | | | | | | | |
| PO(fit) | -0.333*** | -0.375*** | -0.272*** | -0.040 | 4.579*** | 0.327 | 4.279** | -0.169 |
| | (0.077) | (0.077) | (0.067) | (0.045) | (1.468) | (0.244) | (1.801) | (0.318) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 82,005 | 63,029 | 82,005 | 82,145 | 79,436 | 56,693 | 46,461 | 81,469 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note:*p<0.1; **p<0.05; ***p<0.01

changes such as another index switch might affect the results.

*Analysis with additional ownership control variables*
The 2SLS approach reduces omitted variable concerns.[182] Nevertheless, I cannot exclude the possibility that other investor types are correlated with long-term orientation, pas-

sive ownership, and MSCI ACWI membership. Thinkable variables are foreign and institutional ownership. Foreign investors have been found to be connected to MSCI ACWI membership and they also seem to positively impact long-term orientation.[183] If they are also associated with pas-

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[182]See Roberts & Whited, 2013, p. 567.

[183]See Bena et al., 2017, pp. 123-124; Luong et al., 2017, p. 1470; Shin & Park, 2020, p. 9.

sive ownership, the results might be biased. Institutional investors should be positively connected with long-term orientation, because they seem to displace retail investors, which are not able to monitor and engage effectively.[184] Passive investors and institutional investors are expected to be correlated, because passive investors are a subgroup of institutional investors. If non-passive institutional investors are connected to MSCI ACWI inclusion, then the validity of the results might suffer. To eliminate concerns that foreign or institutional ownership affect the results, they are included as control variables.[185]

Table 11 shows that foreign and institutional ownership do not tackle the validity of the results of this thesis. The coefficients for passive ownership are robust compared to those of the main analysis.

4.4. Discussion

In the following, the underlying assumptions and the used methodology will be critically assessed. To tackle endogeneity, an IV approach is used. Even though this approach mitigates endogeneity concerns, there is no way to guarantee a sufficient removal.[186] This gets even more apparent considering that there are concerns regarding the exclusion restriction: Passive investors can manipulate the index reconstitution mechanisms by influencing the index providers. This can lead to a selection bias. A recent example is the successful engagement of passive investors against dual-class structure companies.[187] Analogous, they could influence the index providers to change the reconstitution mechanisms to systematically favor long-term oriented firms. I cannot exclude the possibility that passive investors influence the index providers. Firms that are expected to be long-term oriented might be more popular. Therefore, their market capitalization would be higher, and index inclusion get more likely. An association between long-term orientation and index inclusion seems thinkable, but I expect it to be unlikely because the MSCI ACWI aims to cover the investable equity universe of a country. Stocks are added because they are part of the investable equities of a country and not because of firm specific characteristics.[188]

Unobserved ownership dynamics such as ownership concentration might bias the findings. A study by J. Francis and Smith (1995) indicates that large blockholdings are correlated with innovation.[189] A rise in passive ownership is expected to foster blockholdings.[190] If blockholdings and MSCI ACWI inclusion are related in other ways than through passive ownership, then this might affect the results.[191] Because

I have no data available for blockholdings, there is no control possible.

The results might also be influenced by passive investors trying to minimize rebalancing costs by predicting index switchers. This leads to a less pronounced passive ownership discontinuity at the index inclusion threshold.[192] Nevertheless, the relevance condition of the MSCI ACWI holds. The phenomenon of predicting index switchers seems not critically affect the results but must be considered when interpreting the magnitudes of the coefficients.

For the long-term orientation measures, the underlying assumption is that they aim at creating long-term value. Nevertheless, R&D expenses could also arise due to short-term focused or NPV negative projects, CAPEX could increase due to empire building, and staff costs could rise due to an uneconomical high wage level. Therefore, when analyzing the results it must be considered that long-term orientation is a latent variable and can only be proxied by the used measures.[193] One may also criticize that no measures for innovation output such as patents have been tested.[194] I argue that the sole intention to enhance long-term performance by increasing investment levels can be viewed as long-term orientation. Empirical evidence suggests a strong correlation between R&D expenses and patent numbers.[195] Therefore, by checking for R&D expenses I also get an indicator for passive investors' effect on innovation output. Nevertheless, it's not possible to directly evaluate the success of the investment activities by the results of this thesis.

Appel et al. (2020) argue that one should not rely on index switchers by including firm fixed effects. The estimates are noisier and the changes in passive ownership are rather transitory than sustained.[196] In the bandwidth analysis in chapter 4.3.3 firm fixed effects are substituted with country and industry fixed effects. The results are similar to the main analysis. Therefore, relying on index switchers seems to still capture sustained effects.

To address outliers, the continuous variables have been winsorized. While winsorizing is a standard practice in literature, there are also critics of this way of outlier treatment. Adams, Hayunga, Mansi, Reeb, and Verardi (2019) point out that winsorizing only affects univariate outliers. Outliers can also appear over several variables. While winsorizing manipulates univariate outliers, the effect of multivariate outliers might even increase.[197] Nevertheless, I followed the standard practice and performed winsorizing to the 1% and 99% quantile.

Finally, the findings of this thesis cannot be generalized to reconstitutions of other indices or general passive ownership changes. The IV approach explains the effects of passive

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[184]See Mullins, 2014, p. 5.

[185]See B. B. Francis et al., 2020, p. 56.

[186]See Roberts & Whited, 2013, p. 567.

[187]See Fisch et al., 2020, pp. 51, 60-61; Robertson, 2019, pp. 795, 797-798.

[188]See Bena et al., 2017, p. 130.

[189]See J. Francis & Smith, 1995, p. 408.

[190]See Bebchuk & Hirst, 2019, p. 2033; Fichtner et al., 2017, pp. 306, 313; Fisch et al., 2020, pp. 61-62.

[191]See Angrist & Krueger, 2001, p. 79.

[192]See Wei & Young, 2017, pp. 1-5.

[193]See Brauer, 2013, p. 389.

[194]See Bena et al., 2017, pp. 125-127; Kim, Park, & Song, 2019, pp. 1168-1169.

[195]See Griliches, 1990, pp. 1701-1702.

[196]See Appel et al., 2020, pp. 26-27.

[197]See Adams et al., 2019, pp. 345, 347, 352.

**Table 11:** Summary of results: Additional ownership controls.

This table shows the results of the analysis with additional ownership control variables. The included controls are total institutional ownership and foreign ownership. For the OLS and IV regressions, both specifications as defined in chapter 4.1.2 are built. Detailed regression tables can be found in Appendix 17. The long-term orientation proxies are: (1) CAPEX+R&D | (2) CAPEX+R&D (3yr avg.) | (3) CAPEX | (4) R&D | (5) log(EMPLOYEES) | (6) STAFF_COST | (7) log(AVG_STAFF_COST) | (8) SG&A. The sample consists of firm-year combinations from Worldscope from 2000 to 2019. All independent variables are lagged by one year. The standard errors are clustered on the country and year level and are reported in the parentheses. All numeric variables are winsorized to their 1% and 99% quantile.

| | Dependent variable: | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **OLS: Full Model** | | | | | | | | |
| PO | 0.059*** | 0.062*** | 0.043* | 0.017*** | 0.432 | -0.011 | -1.655** | -0.003 |
| | (0.019) | (0.018) | (0.022) | (0.006) | (0.259) | (0.075) | (0.678) | (0.103) |
| IO | -0.002 | -0.004 | 0.001 | -0.002** | 0.184*** | 0.015 | -0.140 | -0.005 |
| | (0.003) | (0.003) | (0.003) | (0.001) | (0.042) | (0.015) | (0.116) | (0.020) |
| IO_FOR | -0.003 | -0.006 | -0.002 | -0.001 | 0.384*** | 0.028 | -0.217 | 0.130*** |
| | (0.006) | (0.007) | (0.005) | (0.002) | (0.120) | (0.026) | (0.130) | (0.042) |
| Observations | 124,316 | 99,653 | 124,316 | 124,452 | 123,616 | 90,332 | 73,842 | 128,003 |
| **OLS: Bena Model** | | | | | | | | |
| PO | 0.051** | 0.060*** | 0.044* | 0.005 | 0.463*** | -0.031 | -1.388* | -0.060 |
| | (0.019) | (0.018) | (0.023) | (0.007) | (0.158) | (0.078) | (0.677) | (0.107) |
| IO | 0.005* | -0.001 | 0.008*** | -0.003*** | 0.499*** | 0.017 | -0.114 | -0.001 |
| | (0.003) | (0.003) | (0.003) | (0.001) | (0.056) | (0.014) | (0.117) | (0.022) |
| IO_FOR | 0.003 | -0.005 | 0.004 | -0.0003 | 0.640*** | 0.006 | -0.096 | 0.117** |
| | (0.006) | (0.006) | (0.005) | (0.002) | (0.127) | (0.022) | (0.129) | (0.048) |
| Observations | 137,583 | 109,462 | 137,583 | 137,772 | 137,554 | 100,461 | 83,051 | 140,171 |
| **IV: Full Model** | | | | | | | | |
| PO(fit) | -0.046 | -0.071 | -0.053 | 0.009 | 4.658*** | 0.940* | 2.251 | 1.192* |
| | (0.079) | (0.074) | (0.052) | (0.046) | (1.226) | (0.459) | (3.498) | (0.570) |
| IO | 0.006 | 0.004 | 0.008** | -0.002 | -0.129 | -0.023 | -0.298 | -0.094 |
| | (0.006) | (0.007) | (0.003) | (0.004) | (0.105) | (0.028) | (0.197) | (0.063) |
| IO_FOR | -0.002 | -0.006 | -0.0003 | -0.001 | 0.322* | -0.017 | -0.389 | 0.108* |
| | (0.007) | (0.007) | (0.006) | (0.002) | (0.162) | (0.031) | (0.229) | (0.052) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 124,316 | 99,653 | 124,316 | 124,452 | 123,616 | 90,332 | 73,842 | 128,003 |
| **IV: Bena Model** | | | | | | | | |
| PO(fit) | 0.082 | -0.041 | 0.118** | -0.038 | 15.102*** | 0.730** | 5.047 | 1.261** |
| | (0.090) | (0.073) | (0.053) | (0.062) | (2.292) | (0.326) | (3.377) | (0.485) |
| IO | 0.003 | 0.006 | 0.003 | -0.00002 | -0.568** | -0.011 | -0.350 | -0.099* |
| | (0.005) | (0.006) | (0.004) | (0.005) | (0.201) | (0.022) | (0.203) | (0.056) |
| IO_FOR | 0.003 | -0.006 | 0.003 | 0.0001 | 0.488* | -0.029 | -0.364 | 0.098* |
| | (0.006) | (0.006) | (0.004) | (0.002) | (0.255) | (0.027) | (0.247) | (0.053) |
| Instr. strong? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 137,583 | 109,462 | 137,583 | 137,772 | 137,554 | 100,461 | 83,051 | 140,171 |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Note:*p<0.1; **p<0.05; ***p<0.01

investors on firms' long-term orientation due to exogenous passive ownership variation based on MSCI ACWI affiliation. The external validity is not given.[198] Therefore, changes in passive ownership due to other reasons than MSCI ACWI membership might yield different results.

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[198]See Imbens & Angrist, 1994, p. 470; Roberts & Whited, 2013, p. 519.

## 5. Conclusion

This thesis investigates the effect of passive investors on the long-term orientation of their portfolio companies. This field of research is of specific interest due to the enormous growth of passive investors in the last decades and its implications for the whole economy.[199] This thesis contributes to existing literature by using recent and world-wide data. A broad bandwidth of long-term orientation measures is investigated. To mitigate endogeneity concerns an IV approach is applied. Hereby, passive ownership is instrumented by MSCI ACWI membership.

A comparison of the OLS and IV results express the need to account for endogeneity in 'passive investors' research. In the first stages a positive relation between MSCI ACWI affiliation and passive ownership is identified. This supports the usage of the MSCI ACWI as an instrument for passive ownership. The results provide evidence that an exogenous increase in passive ownership has a positive impact on long-term orientation. This in in line with the majority of literature. Especially, for investment in human and organizational capital the results suggest a strong and significant relation. Passive investors seem to foster number of employees, staff costs and SG&A expenses. For CAPEX only some evidence suggests a positive association with passive ownership. For R&D investment and average staff costs no effects can be identified. In additional tests I find remarkable differences of passive investors' impact regarding individual countries, market types, and size groups. Passive investors also shift their focus between the different long-term orientation facets over time.

This thesis suggests that passive investors positively influence the long-term orientation of their portfolio companies. This especially concerns investments in human and organizational capital, but recently also R&D- and CAPEX-based measures. Therefore, concerns of the growing power of passive investors and their capability to appropriately engage in their portfolio companies seem to be unfounded. Future research could focus on the exact channels[200] by which passive investors enhance long-term orientation. Interesting could also be an investigation of innovation output measures for an global sample.[201] An examination of whether to include the main determinants of index inclusion[202] as controls in an IV estimation with a index-based instrument - as proposed by Appel et al. (2016, 2019, 2020) - could also be meaningful, because this affects the results of this thesis at least partially.[203]

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[199] See Bebchuk & Hirst, 2019, p. 2041; Qin & Wang, 2018, p. 8.

[200] E.g.: voting or private engagement.

[201] This could be analogous to Bena et al. (2017) approach for foreign ownership.

[202] Such as the (floating) market capitalization for the MSCI ACWI or the Russell 1000/2000.

[203] See Appel et al., 2016, pp. 113, 120-121; Appel et al., 2019, pp. 2733-2734; Appel et al., 2020, pp. 6-7.

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# Accounting for Player Values in German Professional Soccer - A Critical Comparison of German Commercial Law and IFRS Accounting

# Bilanzierung von Spielerwerten im deutschen Profi-Fußball – Ein kritischer Vergleich der handelsrechtlichen und IFRS-Rechnungslegung

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## Abstract

While the central value drivers of traditional companies consist of products or services, the central assets of soccer companies are their players. In the accounting literature, sports companies are only insufficiently considered, which is the basis of this work. This thesis focuses on the German professional soccer league. The aim of this work is to answer the question of whether soccer players are recognizable at all and how they should be valued in the financial statements. In doing so, German commercial law is compared to IFRS. The recognition criteria and valuation rules of both standards are elaborated before a literature-based subsumption is made, considering the different objectives of the standards. The results show that the recognition of player values under German commercial law is more controversial than under IFRS and that there are important differences in the valuation of loan transactions and player sales. Furthermore, the applicability and determination of the fair value of soccer players under the primary procedures of the standards proves to be difficult. Therefore, the literature should focus more on models for determining the fair value of soccer players, as there is no common procedure in this area and this would be beneficial for several reasons.

## Zusammenfassung

Während die zentralen Werttreiber klassischer Unternehmen aus Produkten oder Dienstleistungen bestehen, bilden das zentrale Vermögen von Fußballclubs ihre Spieler. In der bilanzrechtlichen Literatur werden Sportunternehmen nur unzureichend berücksichtigt, was die Grundlage dieser Arbeit bildet. Diese Thesis fokussiert sich auf die deutsche Bundesliga. Ziel dieser Arbeit ist es die Frage zu beantworten, ob Fußballspieler überhaupt bilanziell ansatzfähig sind und wie diese zu bewerten sind. Dabei wird das deutsche Handelsrecht den IFRS gegenübergestellt. Die Ansatzkriterien und Bewertungsvorschriften beider Standards werden erarbeitet, ehe eine literaturbasierte Subsumtion unter Anbetracht der unterschiedlichen Ziele der Standards erfolgt. Die Ergebnisse zeigen, dass der Ansatz von Spielerwerten nach Handelsrecht umstrittener ist als nach den IFRS und bei der Bewertung wichtige Unterschiede bei Leihgeschäften und Spielerverkäufen bestehen. Ferner erweist sich die Nutzbarkeit und Ermittlung des Fair Values von Fußballspielern nach den vorrangigen Verfahren der Standards als schwierig. Die Literatur sollte sich daher stärker mit Modellen für die Ermittlung des Fair Values von Fußballspielern beschäftigen, da hier kein gängiges Verfahren existiert und ein Nutzen für mehrere Zwecke gegeben wäre.

*Keywords:* Fußballclub; Fußballspieler; Bundesliga; Ansatz; Bewertung.

## 1. Einleitung

Die Sportart, bei der 20 Feldspieler einem Ball hinterherlaufen, um diesen über die gegnerische Tor-Linie zu schießen, auch bekannt als „Fußball", war die beliebteste Sportart in Deutschland zwischen den Jahren 2019 und 2021 (vergleiche (vgl.) Statista, 2021a). Vor allem die alle zwei Jahre stattfinde Europa- und Weltmeisterschaft, bei der die Mannschaften der qualifizierten Nationen gegeneinander antreten,

haben sich zu einem zentralen Bestandteil der heutigen Gesellschaft entwickelt und sind mittlerweile nicht mehr wegzudenken. Selbst Menschen, die sich nicht für den Fußball interessieren, kommen um die genannten Wettbewerbe nicht herum. Seien es die Flurgespräche der Kollegen über die gestrigen Ergebnisse oder die mit Nationalflaggen geschmückten Straßen, über die man täglich fährt. Auch die nationalen Wettbewerbe, in Deutschland insbesondere (insb.) die höchste Spielklasse (Bundesliga), lockt zu jedem Spieltag massig Zuschauer in die Stadien und vor die Fernseher.

Mit dem gesellschaftlichen Mehrwert sind jedoch erhebliche ökonomische Dimensionen im Bereich des Profi-Fußballs verbunden. So erzielten die Clubs der Bundesliga gemeinsam im Spieljahr 2018/2019 Gesamtaufwendungen in Höhe von (i.H.v.) 3.892 Millionen Euro (MEUR) und Gesamterträge i.H.v. 4.020 MEUR. Erträge/Aufwendungen für Spielertransfers betrugen in der Spielzeit 2018/2019 pro Club 37,5/46,8 MEUR (vgl. Küting & Strauß, 2020, S. 393). Diese sind von der Ablösezahlung abhängig, die ein aufnehmender Club leisten muss, wenn er einen Spieler vorzeitig aus seinem Arbeitsvertrag rauskauft. Die Höhe dieser Zahlungen ist in den letzten Jahren erheblich gestiegen. So überwies der FC Barcelona im Jahre 1982 „nur" 7,3 MEUR und erwarb dadurch den wohl bekanntesten und begnadetsten Fußballer aller Zeiten, Diego Maradona und stellte damit den damaligen Transfer-Rekord auf. Wirft man einen Blick auf die folgenden Transfer-Rekorde, stellt man fest, dass die Ablösezahlungen erheblich gestiegen sind. Die 100-Millionen-Marke wurde erstmalig mit dem Transfer von Gareth Bale (101 MEUR) von Tottenham Hotspur zu Real Madrid im Jahr 2013 erreicht. Vier Jahre später wurde die derzeitige Rekordsumme von 222 MEUR vom Football Club (FC, zu Deutsch Fußballclub) Paris Saint-Germain überwiesen, um den Spieler Neymar zu verpflichten, der zuvor für den FC Barcelona spielte (vgl. Transfermarkt, 2022). Ein Rückgang der Summen ist nicht zu erwarten, vielmehr deutet die aktuelle Marktentwicklung auf das Gegenteil hin.

Das folgende Zitat von Jürgen Klopp verdeutlicht zudem die enormen ökonomischen Risiken, die einhergehen können, wenn Profi-Fußballspieler für derartige Summen verpflichtet werden. „Wenn du für einen einzigen Spieler 110 Millionen Euro oder mehr ausgibst und er verletzt sich, dann ist das ganze Geld verbrannt." (Jürgen Klopp 2016, zitiert nach Eurosport, 2016). Die Fußballer bilden die zentralen Werttreiber eines Fußball-Unternehmens. Die Ertragspotenziale anderer Vermögensgegenstände beziehungsweise (bzw.) -werte werden maßgeblich von diesen beeinflusst (vgl. Hoffmann, 2006, S. 130). Eine Mannschaft mit guten Fußballspielern lockt regelmäßig Zuschauer in das Stadion und führt zu erhöhten Trikots- und Merchandising-Absätzen. Ein Fußball-Unternehmen ist im Grunde ohne seine Spieler wertlos (vgl. ebenda (ebd.)). Diese Thesis knüpft an diesen Punkt an und thematisiert die zentralen Werttreiber eines Profi-Fußballunternehmens aus bilanzieller Sicht.

Dabei wird untersucht, ob Profi-Fußballer bilanzierungsfähig nach dem HGB und den IFRS sind. Bilanzierungsgegenstand ist jedoch nicht der Spieler selbst, sondern die von der Deutschen Fußball Liga (DFL) e.V. erteilte und für den Einsatz des Spielers im Lizenzbetrieb erforderliche Spielerlaubnis (vgl. Kapitel 3.1). Ferner wird untersucht, wie die Spielerlaubnis nach beiden Rechnungslegungsstandards zu bewerten ist. Da ein Grundverständnis über die Struktur des internationalen sowie nationalen Profi-Fußballs hierbei hilfreich ist, wird diese vorher mit Schwerpunkt zum deutschen Profi-Fußball dargelegt. In dem Zusammenhang werden das erforderliche Lizenzierungsverfahren, die Rechnungslegungspflichten der Bundesligisten (so werden die Teilnehmer der höchsten deutschen Spielklasse(n) bezeichnet) und der Kernunterschied zwischen den Rechnungslegungsstandards thematisiert, um Unterschiede, sofern gegeben, zu interpretieren. Ausschließlich aus dem Grund, dass diese Thesis den Männer-Fußball thematisiert, wird auf das Gendern verzichtet.

## 2. Juristischer Rahmen - Implikationen für die Rechnungslegung

### 2.1. Nationale und internationale Verbandsstruktur des Profi-Fußballs

Der deutsche Profi-Fußball wird von der DFL e.V. organisiert. Dieser wiederum ist Teil vom Deutschen Fußball-Bund e.V. (DFB), dessen Aufgabe die allgemeine Organisation des gesamten deutschen Fußballsports unter Beachtung sozialer und gesellschaftlicher Belange ist (vgl. Präambel, § 4 Nr. 1 Deutscher Fußball-Bund-Satzung). Der DFB hat seinen Ursprung im Jahr 1900 (vgl. Präambel DFB-Satzung) und ist der mitgliedsstärkste deutsche Sportfachverband. Er vereint als Mitglieder fünf Regionalverbände (Nord, West, Süd, Südwest und Nordost), 21 Landesverbände und die DFL e.V. Dabei sind die 21 Landesverbände einem Regionalverband untergeordnet und unterteilen sich wiederum in Bezirke und Kreise, denen Vereine mit ihren Mitgliedern angehören (vgl. Deutscher Fußball-Bund, 2018). Während der DFB auf nationaler Ebene den Dachverband des deutschen Fußballs bildet, ist er wiederum Mitglied der Union of European Football Associations (UEFA) und der Féderation Internationale de Football Association (FIFA). Der Deutsche Fußball-Bund verpflichtet sich die Bestimmungen und Entscheidungen der beiden Verbände und ihrer Organe anzuerkennen und umzusetzen (vgl. § 3 Nr. 1, 2 DFB-Satzung).

Die UEFA ist der europäische Kontinentalverband der FIFA, dem 55 Nationalverbände angehören. Aufgabe ist insb. die Förderung des europäischen Fußballs (vgl. Art. 3 Nr. 1 Union of European Football Associations-Statuten; Union of European Football Associations, 2019). Neben der UEFA existieren fünf weitere Kontinentalverbände (Konföderationen) der FIFA. Diese bestehen aus den Nationalverbänden der jeweiligen Kontinente, die in ihren Ländern den Fußballsport organisieren. Ein Nationalverband kann der FIFA nur beitreten, wenn er Mitglied einer Konföderation ist. Die FIFA verfolgt den Zweck, den Fußballballsport international zu verbessern und zu verbreiten (vgl. Artikeln (Artt.) 2 lit. a, 11 Nr. 1, 2, 22 Nr. 1 Fédération Internationale de Football

Association-Statuten). Insgesamt ergibt sich so eine Regelungshierarchie des Fußballsports.

Die Clubs der deutschen Lizenzligen (Bundesliga und 2. Bundesliga) waren bis zum 28. April 2001 außerordentliche Mitglieder des DFB und sind im Zuge einer Strukturreform zur Spielzeit 2001/2002 ausgeschieden und haben die DFL e.V. gegründet (vgl. Präambel Grundlagenvertrag DFB und Liga). Die DFL e.V. vereint jedoch nicht nur die Bundesligisten, sondern besitzt weitreichende Kompetenzen. So führt und organisiert diese den Spielbetrieb der Lizenzligen eigenständig, ermittelt die Fußball-Meister, die Teilnehmer der internationalen Wettbewerbe sowie die Auf- und Absteiger der Lizenzligen. Dabei verwertet die DFL die Vermarktungsrechte der Lizenzligen im eigenen Namen. Eine weitere zentrale Aufgabe ist die Lizenzerteilung an die Vereine bzw. Kapitalgesellschaften und Spieler der Lizenzligen (vgl. §§ 16-16c DFB-Satzung). Aufgrund der Mitgliedschaft beim DFB ist die DFL e.V. den Statuten des DFB, der UEFA und FIFA unterworfen (vgl. § 3 Nr. 1-4 Deutsche Fußball Liga e.V.-Satzung). Für die Erfüllung der operativen Aufgaben wurde die DFL GmbH gegründet (vgl. § 4 Nr. 2 DFL e.V.-Satzung). So obliegt dieser „die verantwortliche Leitung des Spielbetriebs der Lizenzligen und die Erfüllung der damit zusammenhängenden Aufgaben" (§ 2 Nr. 1.1 Deutsche Fußball Liga GmbH-Satzung).

## 2.2. Lizenzierung von Fußballspielern und -clubs

Die Mannschaften und Spieler der Lizenzligen werden lizenziert, um am Spielbetrieb der Bundesliga teilnehmen zu können. Über die Vergabe der Lizenzen entscheiden für Spieler insbesondere die Kriterien der Lizenzordnung Spieler (LOS) und für Clubs die Kriterien der Lizenzierungsordnung (LO) der DFL e.V. (vgl. § 4 Nr. 1 lit. c, d DFL e.V.-Satzung). Es wird zwischen Amateuren und Berufsspielern (Vertragsspieler und Lizenzspieler) im Spielbetrieb der Lizenzclubs differenziert. Während Amateure aufgrund eines Mitgliedschaftsverhältnisses Fußball spielen, sind Vertragsspieler vertraglich gebunden. Lizenzspieler werden als Fußballer definiert, die ihrer Tätigkeit aufgrund eines mit einem lizenzierten Club geschlossenen schriftlichen Arbeitsvertrages nachgehen und einen Lizenzvertrag mit der DFL e.V. geschlossen haben, welcher zur Teilnahme am Spielbetrieb der Lizenzligen berechtigt (vgl. Präambel LOS). Die Lizenzmannschaften der Bundesligisten bestehen aus ihren Lizenzspielern, wodurch diese zentral für diese Arbeit sind. Folgend meint der Begriff „Spieler" den „Lizenzspieler" bzw. die Spielerlaubnis des Lizenzspielers (siehe Kapitel 3.1) und „Mannschaft" die „Lizenzmannschaft".

Der Arbeitsvertrag zwischen Club und Spieler kann neben einigen Pflichtbestandteilen frei ausgestaltet werden. Insbesondere erlaubt der Spieler dem Club seine vermögenswerten Rechte mit Bezug zu seiner Persönlichkeit und Sportlerpersönlichkeit zu nutzen und zu verwerten, sofern diese in Relation zur Eigenschaft als Spieler des Clubs stehen. Der Arbeitsvertrag wird für maximal fünf Jahre geschlossen (vgl. §§ 5 Nr. 1, 6 Nr. 1-3 LOS). Für den Lizenzvertrag hingegen existiert ein vorgeschriebenes Muster (vgl. Anhang I LOS). Wird die Lizenz beantragt, entscheiden folgende Kriterien über die Erteilung. Der Spieler hat das 18. Lebensjahr vollendet und legt den unterschriebenen Lizenzvertrag sowie einen mit einem lizenzierten Club geschlossenen Arbeitsvertrag vor, dessen Gültigkeit an die Lizenzerteilung geknüpft ist. Ferner ist der Nachweis der Sporttauglichkeit erforderlich, die fortan zum Beginn jeder Spielzeit erbracht wird. Zudem dürfen keine offenen Verpflichtungen gegenüber dem DFB, der DFL e.V. oder seinen Mitgliedern bestehen. Die Kriterien werden für Spieler ohne Staatsbürgerschaft eines Mitgliedsstaates der Europäischen Union (EU) oder dem Europäischen Wirtschaftsraum (EWR) ergänzt. So ist in dem Fall ein Aufenthaltstitel mit Berechtigung zur Erwerbstätigkeit erforderlich, der mindestens bis zum Ende der jeweiligen Spielzeit gültig ist (vgl. § 2 LOS).

Im Lizenzvertrag erkennt der Spieler die Statuten und Entscheidungen des DFB und der DFL e.V. an (vgl. § 3 Anhang I LOS). Ist die Lizenz einmal erteilt, besteht diese grundsätzlich (grdsl.) unbefristet (vgl. § 1 LOS), kann aber unter gewissen Bedingungen automatisch erlöschen oder aktiv entzogen werden. So erlöscht die Lizenz unter anderem (u.a.), wenn der Spieler zu einem ausländischen Verband bzw. zu einem ausländischen Club wechselt. Hingegen kann die Lizenz entzogen werden, wenn Vergabe-Kriterien nicht mehr erfüllt werden (vgl. § 3 Nr. 1, 2 LOS). Wie bereits in der Einleitung erwähnt, thematisiert die Thesis die Bilanzierung der Spielerlaubnis. Diese ist nicht gleichzusetzen mit der Lizenz. Wesentlicher Unterschied ist, dass die Lizenz die notwendige Berechtigung für die Teilnahme an den Lizenzligen darstellt, während die Spielerlaubnis clubspezifisch ist und die Ausübung der Berechtigung charakterisiert. So ermächtigt diese einen Spieler für einen spezifischen Club aufzulaufen und den Club dazu, den Spieler einzusetzen (vgl. § 1 Anhang I LOS).

Um die Lizenz und Spielerlaubnis zu beantragen, wird der Spieler im Transfer-Online-Registrierungssystem (TOR) der DFL registriert. Die Anträge für Erteilung der Lizenz und Spielerlaubnis sowie die dafür notwendigen Unterlagen müssen durch den Lizenzclub bis spätestens 18:00 Uhr am letzten Tag der jeweiligen Wechselperiode (1.7.-31.8. und 1.1.-31.1 eines Kalenderjahres) hochgeladen worden sein (vgl. § 4 Nr. 1-3 LOS). Dem Antrag auf Spielerlaubnis ist „unverzüglich stattzugeben", wenn ein wirksamer Vertrag zwischen Club und Spieler vorgelegt wird, für den Vertragszeitraum „keine anderweitigen rechtlichen Bindungen als Spieler an einem anderen Club mehr bestehen", die Sporttauglichkeit nachgewiesen wurde, bei ausländischen Spielern ein zur Erwerbstätigkeit berechtigender Aufenthaltstitel, der mindestens bis zur Vollendung der Spielzeit gültig ist, vorliegt und alle erforderlichen Erklärungen und Nachweise in TOR hochgeladen wurden (§ 13 Nr. 2 LOS). Folglich sind die Kriterien weitestgehend deckungsgleich mit den Kriterien der Lizenzerteilung. Die Spielerlaubnis endet regulär mit Ablauf des Vertrages zwischen Club und Spieler, kann aber, wenn Kriterien nicht mehr erfüllt werden, vorzeitig entzogen werden (vgl. § 13 Nr. 6, 7 LOS).

Neben den Spielern müssen auch die Bundesligisten lizenziert werden. Dafür schließen diese einen Vertrag mit der

DFL. e.V., in dem die Statuten und Entscheidungen des DFB und der DFL anerkannt werden. Die Lizenz wird immer für die bevorstehende Spielzeit erteilt und wird folgerichtig vor jeder Spielzeit beantragt (vgl. § 1 LO). Die Einführung einer Club-Lizenzierung wurde durch die FIFA beschlossen. Die Intention dahinter war u.a. die Integrität des Wettbewerbes zu fördern und Transparenz bezüglich der Finanzlage, Eigentümerstruktur sowie Abhängigkeitsverhältnissen der Clubs zu schaffen (vgl. Art. 1 Nr. 1.1 Fédération Internationale de Football Association-Klublizenzierungsreglement). Dazu etablieren die Kontinental- bzw. Nationalverbände ein Club-Lizenzierungssystem, das auf den Mindestanforderungen der FIFA bzw. des Kontinentalverbandes aufbaut (vgl. Art. 2 Nr. 2.2 FIFA-Klublizenzierungsreglement). Die DFL ist folglich Lizenzgeber, während die Bundesligisten Lizenzbewerber sind (vgl. Galli, Benz & Traverso, 2012, S. 187).

Die Bundesligisten weisen im Lizenzierungsverfahren sportliche, rechtliche, personelle und administrative, infrastrukturelle, finanzielle und medientechnische Kriterien nach (vgl. § 2 Nr. 1 lit. b-g LO). Dadurch wird der Spielbetrieb der kommenden Spielzeit gesichert sowie planbar und durchführbar gemacht. Ferner wird die Leistungs- und Konkurrenzfähigkeit der Teilnehmer der Lizenzligen und der internationalen Wettbewerbe gesichert (vgl. Präambel LO). Im Rahmen der finanziellen Kriterien erfolgt ein Nachweis über die wirtschaftliche Leistungsfähigkeit. Dafür reicht der Bewerber vor (bis zum 15. März) und während (bis zum 31. Oktober) einer Spielzeit eine Konzern-Bilanz-, Gewinn- und Verlustrechnung (GuV)-, Anhang sowie einen Konzern-Lagebericht ein. Ferner ist eine Konzern-Plan-GuV erforderlich, die sich vor allem auf die bevorstehende Spielzeit bezieht. Es ist notwendig, dass die Unterlagen durch einen Wirtschaftsprüfer in Abhängigkeit des Geschäftsjahres geprüft oder einer prüferischen Durchsicht unterzogen werden. Existiert kein Konzern, werden die Unterlagen aus Sicht des Einzelunternehmens erstellt (vgl. §§ 8, 8a LO). Die rechtliche Konzernstruktur ergibt sich aus Vor § 8 und § 8a LO.

Die einzureichenden Abschlüsse müssen unabhängig von der Rechtsform des Bewerbers nach den handelsrechtlichen Rechnungslegungsvorschriften für Kapitalgesellschaften oder optional nach den IFRS erstellt und geprüft werden. Ferner sind die im Anhang VIIc dargelegten Rechnungslegungsvorschriften und die in den Anhängen VII und VIIa enthaltenen Regularien zur Darstellung von Finanzinformationen zu beachten. Letztere enthalten u.a. eine um fußballspezifische Posten erweiterte Bilanz- und GuV-Struktur (siehe Anhänge A und B). Die Regularien bezüglich der Darstellung von Finanzinformationen sind jedoch keine Rechnungslegungsvorschriften nach HGB oder IFRS, sondern dienen einzig dem Zweck der Lizenzierung (vgl. Anhang VII Lizenzierungsordnung, Anhang VIIa Lizenzierungsordnung und Anhang VIIc Lizenzierungsordnung). Die wirtschaftliche Leistungsfähigkeit des Bewerbers wird anhand seiner Liquiditätslage beurteilt. Die Berechnung erfolgt mit dem im Anhang IX enthaltenen Schema. Es wird geprüft, ob der Lizenzbewerber fähig ist, jederzeit während der zu lizenzierenden Spielzeit seinen Spielbetrieb aufrecht zu erhalten (vgl. Anhang IX Lizenzierungsordnung).

## 2.3. Rechnungslegungspflichten der Bundesligisten

Die Rechnungslegungspflichten der Bundesligisten hängen maßgeblich von ihrer Rechtsform ab. Der Begriff „Fußballverein" ist nicht mehr zutreffend, da der DFB-Bundestag im Jahre 1998 die Ausgliederungsmöglichkeit der Lizenzspielerabteilungen in Kapitalgesellschaften beschloss. Dadurch sollten Finanzierungsmöglichkeiten am Kapitalmarkt realisiert und Sponsoren sowie andere Interessierte organisatorisch gebunden werden können. In dem Zusammenhang wurde auch die umstrittene 50+1-Regel eingeführt (vgl. Deutsche Fußball Liga, 2018), welche besagt, dass der Verein die Mehrheit der Stimmrechte oder eine vergleichbare Position besitzen muss. Die Kapitalgesellschaft ist in dem Fall zwar rechtlich selbstständig, aber wirtschaftlich vom Verein abhängig (vgl. Rade & Stobbe, 2009, S. 1109). Damit wird verhindert, dass Kapitalinvestoren mit vordergründig wirtschaftlichen statt sportlichen Zielen über die Entscheidungsgewalt verfügen (vgl. Hierl & Weiß, 2015, S. 15).

In der aktuellen Spielzeit 2021/2022 der 1. Bundesliga haben „lediglich" vier Clubs die Rechtsform eines eingetragenen Vereines (e.V.). Darüber hinaus firmieren drei Bundesligisten als Aktiengesellschaft (AG), fünf als Gesellschaft mit beschränkter Haftung (GmbH) und sechs als Gesellschaft mit beschränkter Haftung & Compagnie Kommanditgesellschaft auf Aktien (GmbH & Co. KGaA, vgl. Statista, 2021b). Bei letzterer ist nicht erforderlich, dass der Verein die Mehrheit der Stimmen besitzt. Es reicht aus, wenn einer GmbH, die zu 100% vom Verein besitzt wird, als Komplementär die „kraft Gesetzes eingeräumte Vertretungs- und Geschäftsführungsbefugnis uneingeschränkt zusteht." (§ 16c Nr. 3 DFB-Satzung). Obwohl die Kommanditgesellschaft grundsätzlich eine Personengesellschaft ist, gelten für die GmbH & Co. KGaA die ergänzenden Vorschriften des HGB für Kapitalgesellschaften analog, da keine natürliche Person haftet (vgl. § 264a Abs. 1 HGB). Daher werden im Folgenden die Rechnungslegungspflichten von Kapitalgesellschaften und Vereinen dargestellt.

Eine Kapitalgesellschaft ist als Formkaufmann gemäß der §§ 6, 238-329 HGB zur Rechnungslegung (Buchführung und Jahresabschluss) sowie Prüfung und Offenlegung des Jahresabschlusses verpflichtet (vgl. Schülke, 2012, S. 45). Kapitalgesellschaften erweitern den Jahresabschluss (Bilanz und GuV) um einen Anhang und erstellen zusätzlich einen Lagebericht. Bei Kapitalmarktorientierung wird der Jahresabschluss ferner um eine Kapitalflussrechnung und einen Eigenkapital-Spiegel ergänzt. Optional kann ein Segmentbericht erstellt werden (vgl. §§ 242, 264 Abs. 1 HGB). Besteht ein Konzern, ist die Aufstellung eines Konzernabschlusses und -lageberichtes verpflichtend (vgl. §§ 290 Abs. 1, 297 Abs. 1 HGB). Die Prüfungs- und Offenlegungspflichten ergeben sich aus den §§ 316 Abs. 1, 2, 325 Abs. 1, 3 HGB. Ferner sind größenabhängige Erleichterungen bzw. Befreiungen zu beachten.

Gemäß Artikel 4 der Verordnung Nr. 1606/2002 des Europäischen Parlaments und des Rates müssen kapitalmarkt-

orientierte Gesellschaften, die dem Recht eines Mitgliedsstaates der EU unterliegen und zur Aufstellung eines Konzernabschlusses verpflichtet sind, diesen für Geschäftsjahre ab dem 1. Januar 2005 nach den IFRS aufstellen. Davon ist in der Bundesliga nur die Borussia Dortmund GmbH & Co. KGaA betroffen. Ein IFRS-Abschluss hat im Wesentlichen die gleichen Bestandteile wie ein HGB-Abschluss, mit der Ausnahme, dass immer zusätzlich ein Anhang, Eigenkapitalveränderungsspiegel und eine Kapitalflussrechnung zu erstellen sind (vgl. IAS 1.10). Ferner wird ein Segmentbericht bei Kapitalmarktorientierung notwendig (vgl. IFRS 8.2). Ein Lagebericht ist in den IFRS zwar nicht vorgesehen, wird aber handelsrechtlich verlangt, wenn ein Unternehmen seinen Konzernabschluss gemäß der zitierten Verordnung nach den IFRS aufstellt. Der Konzernabschluss und -lagebericht wird analog geprüft und offengelegt (vgl. § 315e Abs. 1 HGB).

Das Bürgerliche Gesetzbuch unterscheidet zwischen einem nicht wirtschaftlichen Verein (ideell bzw. eingetragen) und einem wirtschaftlichen Verein (vgl. §§ 21, 22 BGB). In der Bundesliga sind nur eingetragene Vereine vertreten. Die Geschäftsführung des Vorstandes eines eingetragenen Vereins hat „lediglich" gemäß (gem.) § 27 Abs. 3 in Verbindung mit (i.V.m.) § 666 BGB den Vereinsmitgliedern Auskunft und Rechenschaft über die laufende Geschäftsführung zu geben. Dafür wird nach den §§ 259 Abs. 1 und 260 Abs. 1 BGB eine geordnete Aufstellung über die Einnahmen und Ausgaben vorgelegt und ein Bestandsverzeichnis geführt (vgl. Siegloch/Klimmer 2003, zitiert nach Küting & Strauß, 2010, S. 793).

Die handelsrechtliche Rechnungslegungspflicht ergibt sich, wenn der ideelle Verein im Rahmen des Nebenzweckprivilegs einen kaufmännisch eingerichteten wirtschaftlichen Geschäftsbetrieb betreibt. Auf diesen finden die Prüfungs- und Offenlegungspflichten der §§ 316 Abs. 1, 2 und 325 Abs. 1, 3 HGB jedoch keine Anwendung, da diese auf Kapitalgesellschaften und Personengesellschaften ohne persönlich haftende Gesellschafter beschränkt sind. Darüber hinaus kann sich eine Buchführungs-, Aufstellungs-, Offenlegungs- und Prüfungspflicht aus dem Publizitätsgesetz ergeben. Dies scheitert jedoch am Geltungsbereich in § 3 Abs. 1 Nr. 3 PublG, welcher nur den wirtschaftlichen Verein aufführt (vgl. Küting & Strauß, 2010, S. 793 folgend (f.), Fußnote (Fn.) 12).

Die Lizenzspielerabteilungen der Bundesligisten können eindeutig als wirtschaftliche Geschäftsbetriebe klassifiziert werden, wodurch diese grdsl. nicht als ideelle Vereine gelten. Die Firmierung als ideeller Verein und die Anwendung des Nebenzweckprivilegs wäre nur gestattet, wenn der Nebenzweck dem ideellen dient und untergeordnet ist. Dies ist nicht der Fall, da Lizenzspielerabteilungen den ideellen Zielen (z.B. Jugendmannschaften) nicht untergeordnet sind und auch nicht zur Erreichung beitragen. Vielmehr bilden diese den Mittelpunkt der Bundesligisten. Ferner werden mit den Lizenzspielerabteilungen ökonomische Dimensionen erreicht, die den handelsrechtlichen Größenkriterien mittelgroßer und großer Kapitalgesellschaften entsprechen, sodass nicht von einem Nebenzweckprivileg ausgegangen

werden kann. Daher dürften die Bundesligisten gar nicht die Rechtsform eines eingetragenen Vereines annehmen. Folglich liegt eine Rechtsformverfehlung vor (vgl. ebd., S. 794 f.). Aus dem Nebenzweckprivileg ergibt sich zwar eine Rechnungslegungspflicht für die Lizenzspielerabteilung, diese ist jedoch hauptsächlich für steuerliche Zwecke relevant. Nach § 140 AO ist die Einreichung einer Steuerbilanz erforderlich, die den nach § 5 EStG ermittelten Gewinn des wirtschaftlichen Geschäftsbetriebs enthält (vgl. Littkemann & Schaarschmidt, 2002, S. 379).

Für Lizenzierungszwecke reichen die Bundesligisten zwar einen Konzernabschluss nach HGB oder optional IFRS ein, dieser unterliegt jedoch nicht der Offenlegung. Während die zusätzlichen Posten der Bilanz- und GuV-Struktur der DFL aufgrund eines besseren Verständnisses der Vermögens- und Finanzlage für den handelsrechtlichen und IFRS-Abschluss legitim sein könnten (vgl. § 265 Abs. 5 HGB; IAS 1.55), sind die Rechnungslegungsgrundsätze der DFL widersprüchlich zu den Regelungen der Standards. Dies stellt ein Problem dar, wenn ein Bundesligist handelsrechtlich und lizenzierungstechnisch „nur" einen Abschluss erstellt (Erweiterung des Prüfungsauftrages). Jedoch wird auf dieses Dilemma im Rahmen der Thesis nicht eingegangen, da in den folgenden Kapiteln die Bilanzierung von Spielerwerten nach HGB und IFRS, losgelöst von den Rechnungslegungsgrundsätzen der Lizenzierungsordnung dargelegt wird.

Obwohl mehrere Unterschiede zwischen HGB und IFRS bestehen, wird folgend der (für die Thesis) Wesentlichste dargelegt. Ziel der handelsrechtlichen Regelungen ist es Gläubiger zu schützen. Daher wird vorsichtig bewertet (vgl. § 252 Abs. 1 Nr. 4 HGB), damit das ausgewiesene Vermögen im Insolvenzfall „tatsächlich" vorhanden ist und liquidiert werden kann. Dennoch soll bei der Bewertung von der Fortführung des Unternehmens ausgegangen werden (vgl. § 252 Abs. 1 Nr. 2 HGB). Daher enthält das Handelsrecht Prinzipien wie das Vorsichts-, Niederstwert- und Imparitätsprinzip. Nach dem Niederstwertprinzip müssen Vermögensgegenstände mit dem niedrigeren Wert am Bilanzstichtag angesetzt werden. Das Imparitätsprinzip besagt, dass Aufwendungen immer zu erfassen sind, wogegen Erträge erst bei Realisierung erfasst werden dürfen (Realisationsprinzip, vgl. §§ 252 Abs. 1 Nr. 4, 253 Abs. 3, 4 HGB). Ferner bilden die Anschaffungskosten immer die Wertobergrenze (vgl. § 253 Abs. 1 S. 1 HGB). Das Handelsrecht bilanziert somit insgesamt „vorsichtiger". Die IFRS verfolgen vordergründig den Zweck, entscheidungsnützliche Informationen für den Kapitalmarkt bereitzustellen. Daher erfolgt die Bilanzierung insgesamt „mutiger", da nicht für den Insolvenzfall „gespart" wird. Als Beispiel kann das Neubewertungsmodell genannt werden. Durch das Modell können Vermögenswerte zum beizulegenden Zeitwert am Bilanzstichtag bewertet werden, wodurch einerseits die (fortgeführten) Anschaffungskosten überschritten werden können und andererseits Erträge ausgewiesen werden, die noch nicht durch Verkauf realisiert wurden. Insbesondere, dass der Gläubigerschutz kein Ziel der IFRS ist, wird in den folgenden Kapiteln auch anhand der Bewertung von Spielerwerten deutlich.

## 3. Bilanzieller Ansatz von Spielerwerten

### 3.1. Begriffsbestimmung „Spielerwert"

Bevor überprüft werden kann, ob Spielerwerte ansatzfähig nach HGB und IFRS sind, muss der Bilanzierungsgegenstand erstmal bestimmt werden. Es handelt sich bei Spielerwerten um „eine verbandsrechtlich abgesicherte, exklusive Nutzungsmöglichkeit an dem betreffenden Lizenzspieler." (Schröder & Specht, 2020, S. 959; vgl. Bundesfinanzhof (BFH), Urteil vom (v.) 14.12.2011, I R 108/10, Bundessteuerblatt (BStBl.) 2012 II, S. 238). Damit ist die Spielerlaubnis gemeint, welche von der DFL bei Vorliegen der formalen Voraussetzungen erteilt wird. Damit wird auch die Frage beantwortet, ob es sich um einen materiellen oder immateriellen Vermögensgegenstand bzw. -wert handelt. Daher werden die Begriffe „Spielerlaubnis", „Spielerwert" und „Spieler" in der Thesis als Synonyme verwendet. Würde man die Definition nicht kennen, könnte man berechtigterweise vermuten, dass der Spieler selbst gemeint ist. Aufgrund der Menschenwürde wird die Bilanzierung von Menschen kategorisch abgelehnt wird. Faktisch verbirgt sich aber dennoch die Leistungsfähigkeit des Fußballspielers hinter dem Begriff „Spielerwert" (vgl. Littkemann & Schaarschmidt, 2002, S. 375).

### 3.2. Bilanzierungsfähigkeit nach dem HGB

Nach dem Vollständigkeitsgebot in § 246 Abs. 1 HGB müssen alle Vermögensgegenstände, Schulden und Rechnungsabgrenzungsposten in die Bilanz aufgenommen werden. Bevor beurteilt werden kann, ob die Spielerlaubnis bilanzierungsfähig ist, muss der Vermögensgegenstand zunächst bestimmt werden. Das Handelsrecht definiert den Begriff nicht, sodass es sich um einen unbestimmten Rechtsbegriff handelt (vgl. Adler, Düring & Schmaltz, 2021 (ADS), § 246 HGB Textziffer (Tz.) 9). Daher wird das steuerrechtliche Pendant, das Wirtschaftsgut, herangezogen. Für die Beantwortung der Frage, ob ein Wirtschaftsgut vorliegt, sind die handelsrechtlichen Bilanzierungsgrundsätze, insbesondere die Grundsätze ordnungsmäßiger Buchführung (GoB) maßgeblich (vgl. BFH, Urteil v. 06.12.1978, I R 35/78, BStBl. 1979 II, S. 262). Der Bundesfinanzhof leitet durch die Maßgeblichkeit der Handelsbilanz für die Steuerbilanz in § 5 Abs. 1 S. 1 EStG ab, dass der Begriff des Wirtschaftsgutes dem des Vermögensgegenstandes entspricht (vgl. ADS, § 246 HGB Tz. 12).

Obwohl auch der Begriff des Wirtschaftsgutes im Einkommensteuergesetz nicht definiert wird, hat die Rechtsprechung des Bundesfinanzhofes Vermögensgegenstände bzw. Wirtschaftsgüter als „Gegenstände im Sinne des Bürgerlichen Rechts (Sachen und Rechte), darüber hinaus aber auch tatsächliche Zustände und konkrete Möglichkeiten, d.h. sämtliche Vorteile für den Betrieb, deren Erlangung sich der Kaufmann etwas kosten lässt, sofern ihnen im Geschäftsverkehr ein selbstständiger Wert beigelegt wird und sie - allein oder mit dem Betrieb zusammen - verkehrsfähig sind." definiert (Hennrichs, 2013, § 246 HGB Randnummer (Rn.) 22). Der BFH orientiert sich bei Überprüfung der selbstständigen Bewertbarkeit am Teilwert nach § 6 Abs. 1 Nr. 1 S.

3 EStG. So ist ein Wirtschaftsgut selbstständig bewertbar (greifbar), wenn ein gedachter Erwerber des Unternehmens in dem Wirtschaftsgut einen gegenüber dem Geschäftswert abgrenzbaren Einzelwert sehen würde und folglich ein besonderes Entgelt im Rahmen des Gesamtkaufpreises ansetzt. Dies impliziert, dass das Wirtschaftsgut als Einzelheit ins Gewicht fällt. Ferner reicht die Übertragbarkeit mit dem Unternehmen zusammen aus, Einzelverkehrsfähigkeit wird nicht vorausgesetzt (vgl. Hennrichs, 2013, § 246 HGB Rn. 22).

Die Kriterien werden für immaterielle Wirtschaftsgüter, wozu auch die Spielerlaubnis gehört, durch § 5 Abs. 2 EStG erweitert. So dürfen diese nur bei einem entgeltlichen Erwerb angesetzt werden. Entgeltlichkeit liegt vor, wenn für den Übergang des immateriellen Wirtschaftsgutes „aus dem Vermögen eines anderen in das Vermögen des Erwerbers" eine gleichwertige Gegenleistung erbracht wird, die den Vorstellungen der Vertragspartner entspricht. Dadurch findet eine Wertobjektivierung statt (Schmidt & Usinger, 2020, § 248 HGB Rn. 35). „Es genügt nicht, dass gelegentlich des Erwerbs des immateriellen WG irgendwelche Aufwendungen – wie zB Vermittlungsprovisionen – entstanden sind." (ebd., Rn. 39). „Ein Erwerb liegt vor, wenn das wirtschaftliche Eigentum an dem betr WG aus dem Vermögen anderer in das Vermögen des Erwerbers gelangt. Dabei ist es nicht erforderlich, dass sich das WG bereits in fertigem Zustand befindet, bevor es das Vermögen eines anderen verlässt. Es genügt vielmehr, wenn es erst durch das Erwerbsgeschäft geschaffen wird oder erst in der Hand des Erwerbers entsteht, sofern nur alle wesentlichen Komponenten des WG aus dem Vermögen anderer stammen." (ebd., Rn. 36).

Demnach muss ein abgeleiteter Erwerb vorliegen. Dies setzt voraus, dass das immaterielle Wirtschaftsgut durch einen Leistungsaustausch angeschafft wird und Gegenstand des Erwerbsvorgangs ist (vgl. Hennrichs, 2013, § 248 HGB Rn. 44). Selbst erstellte immaterielle Wirtschaftsgüter unterliegen demnach einem Aktivierungsverbot. Das Handelsrecht beinhaltet hingegen seit dem Bilanzrechtmodernisierungsgesetz (BilMoG) ein Wahlrecht für den Ansatz von selbst erstellten immateriellen Vermögensgegenständen (vgl. Schmidt & Usinger, 2020, § 248 HGB Rn. 11; § 248 Abs. 2 S. 1 HGB). Aufgrund des Vollständigkeitsgebotes ist die Entgeltlichkeit kein zwingendes Kriterium eines Vermögensgegenstandes (vgl. ADS, § 246 HGB Tz. 21, 44). Andererseits werden Anschaffungskosten nach § 255 Abs. 1 HGB als Aufwendungen definiert werden, „die geleistet werden, um einen Vermögensgegenstand zu erwerben...". Demnach muss zumindest ein Anschaffungsvorgang (Erwerb) vorliegen.

Ferner empfindet das handelsrechtliche Schrifttum die steuerrechtliche Interpretation als zu weitgehend. Demnach muss ein Vermögensgegenstand selbstständig verkehrsfähig sein, es reicht also nicht, wenn dieser nur mit dem Unternehmen zusammen übertragbar ist. Die rechtliche Übertragbarkeit (konkrete Einzelveräußerbarkeit) wird aber nicht vorausgesetzt, da in dem Fall gesetzliche oder vertragliche Veräußerungsverbote die Bilanzierungsfähigkeit versagen würden. Es reicht aus, wenn der Vermögensgegenstand abstrakt

veräußerbar ist, d.h. die Möglichkeit der Übertragung besteht. Damit das Fehlen von Kaufinteressierten die Klassifizierung als Vermögensgegenstand nicht ausschließt, genügt nach der überwiegenden Ansicht des Schrifttums die selbstständige Verwertbarkeit (vgl. Hennrichs, 2013, § 246 HGB Rn. 23). Diese geht über die Einzelveräußerbarkeit hinaus (vgl. ADS, § 246 HGB Tz. 20) und liegt vor, wenn ein Vermögensgegenstand durch „Verarbeitung, Verbrauch, Überlassung eines Rechts zur Ausübung oder eines Gegenstands zur Nutzung an einen Dritten erfolgen kann" oder generell ein wirtschaftlich verwertbares Potenzial zur Deckung der Schulden des Unternehmens gegeben ist (ebd., Tz. 28).

Ein wesentlicher Unterschied ist, dass das Steuerrecht aufgrund des vorrangigen Gewinnermittlungszweckes die selbstständige Bewertbarkeit als zentrales Kriterium erachtet, während das Handelsrecht aufgrund des Schuldendeckungspotenzials vordergründig auf die selbstständige Veräußerbarkeit und Verwertbarkeit abstellt (vgl. ADS, § 246 HGB Tz. 13). Aus dem Grundsatz der Einzelbewertung folgt, dass ein Vermögensgegenstand trotzdem selbstständig bewertbar (greifbar) sein muss. Durch die selbstständige Verwertbarkeit und Bewertbarkeit wird der Vermögensgegenstand vom Geschäfts- oder Firmenwert abgegrenzt (vgl. Hennrichs, 2013, § 246 HGB Rn. 28).

Das Handelsgesetzbuch enthält in § 242 Abs. 1 S. 1 und § 246 Abs. 1 S. 2 HGB zwei weitere Voraussetzungen. So muss der Vermögensgegenstand dem Betriebsvermögen zurechenbar sein. Ferner muss das Unternehmen das wirtschaftliche Eigentum tragen, was grundsätzlich der Fall ist, wenn es der rechtliche Eigentümer ist. Der wirtschaftliche Eigentümer übt die tatsächliche Sachherrschaft während der wesentlichen wirtschaftlichen Nutzungsdauer eines Vermögensgegenstandes aus. Daraus folgt, dass der wirtschaftliche Eigentümer das Verwertungsrecht (durch Nutzung und/oder Weiterveräußerung) besitzt. Ferner stehen ihm die Chancen und Risiken zu, die sich aus der laufenden Nutzung oder Veräußerung ergeben. Letztlich trägt dieser Wertsteigerungen sowie Wertminderungen und die Gefahr des zufälligen Untergangs des Vermögensgegenstandes (vgl. Schmidt & Ries, 2020, § 246 HGB Rn. 6; ADS, § 246 HGB Tz. 262-266; Institut der Wirtschaftsprüfer (IDW) ERS Hauptfachausschuss (HFA) 13 neue Fassung (n.F.) Tz. 7). Die Frage nach dem wirtschaftlichen Eigentum ist insbesondere bei Spielerleihen relevant. Liegen alle Kriterien kumulativ vor, ist der Vermögensgegenstand abstrakt aktivierungsfähig. Aktivierungspflichtig ist dieser aber nur, wenn auch die konkrete Bilanzierungsfähigkeit erfüllt wird. Demnach muss der Vermögensgegenstand aktiviert werden, wenn kein konkretes Aktivierungswahlrecht oder -verbot besteht (vgl. Hennrichs, 2013, § 246 HGB Rn. 12 f.).

Die Rechtslage zur Bilanzierbarkeit von Spielerlaubnissen und den damit verbundenen Transferentschädigungen war nicht immer ganz eindeutig. Bis zum Anfang der 1970er Jahre konnte beobachtet werden, dass Fußballclubs Transferentschädigungen unterschiedlich erfassten. So wurden diese teilweise als gewinnmindernder Aufwand in voller Höhe erfasst, im Umlaufvermögen aktiviert oder es wurde ein

Rechnungsabgrenzungsposten gebildet. Ein Erlass des Finanzministeriums (FinMin) Nordrhein-Westfalen (NRW) im Jahr 1974 schaffte Klarheit und klassifizierte die Transferentschädigung als Gegenleistung eines entgeltlich erworbenen immateriellen Wirtschaftsgutes (Spielerlaubnis) und damit als Anschaffungskosten (vgl. Steiner & Gross, 2005, S. 532; Hüttemann, 1994, S. 490). Der BFH vertrat in einem Urteil aus dem Jahr 1992 die gleiche Meinung und klassifizierte die Spielerlaubnis als konzessionsähnliches Recht, welches gemäß § 266 Abs. 2 A I Nr. 1 HGB zu den immateriellen Vermögensgegenständen zählt und im Anlagevermögen zu aktivieren ist. In einem Urteil aus dem Jahr 2011 bestätigte der BFH diese Sichtweise (vgl. BFH, Urteil v. 26.08.1992, I R 24/91, BStBl. 1992 II, S. 977; BFH, Urteil v. 14.12.2011, am angegebenen Ort (a.a.O.); Teschke, Knipping & Sundheimer, 2012, S. 1137).

Die Entscheidung des BFH aus dem Jahr 1992 war jedoch nicht unumstritten (vgl. Schiffers & Feldgen, 2015, S. 500). Hauptkritik- bzw. Streitpunkt war, ob Transferentschädigungen tatsächlich für den Erwerb von Spielerwerten gezahlt wurden und ob die in der Rechtsprechung für Vermögensgegenstände bzw. Wirtschaftsgüter festgelegten Kriterien der (selbstständigen) Verkehrsfähigkeit und Bewertbarkeit erfüllt waren. Ferner wurde die Klassifizierung als konzessionsähnliches Recht angezweifelt (vgl. insbesondere Jansen, 1992; Hüttemann, 1994). Das BFH-Urteil aus dem Jahr 1992 beendete einen jahrelangen Rechtsstreit zwischen dem Finanzamt und einem Bundesligisten (vgl. Littkemann & Schaarschmidt, 2002, S. 373). Bei dem Bundesligisten handelte es sich um einen rechtsfähigen Verein, der aufgrund seines Lizenzspielerbetriebs (wirtschaftlicher Geschäftsbetrieb) steuerpflichtig war. Das Finanzamt vertrat in Anlehnung zum Erlass des Finanzministeriums NRW die Ansicht, dass Transferentschädigungen, die im Zusammenhang mit dem Erwerb von Lizenzspielern gezahlt wurden, Anschaffungskosten für entgeltlich erworbene immaterielle Wirtschaftsgüter darstellten und daher aktivierungspflichtig waren. Dieser war damit nicht einverstanden und legte Einspruch ein, welcher abgewiesen wurde. Danach erhob der Bundesligist Klage beim Finanzgericht (vgl. BFH, Urteil v. 13.05.1987, I B 179/86, BStBl. 1987 II, S. 777; Finanzgericht (FG) Düsseldorf, Urteil v. 28.11.1990, 6 K 198/86 K, Entscheidungen der Finanzgericht (EFG) 1991, S. 521).

Die Aktivierungspflicht hatte zur Folge, dass Transferentschädigungen nicht mehr vollumfänglichen im Jahr des Anfalls von der Steuerbemessungsgrundlage abgezogen werden konnten. Das Finanzgericht urteilte zugunsten des Bundesligisten, infolgedessen das Finanzamt in Revision ging. Dem Urteil des Finanzgerichtes schloss sich der Bundesfinanzhof in einem vorherigen Urteil aus dem Jahr 1987 (Aussetzung der Vollziehung (AdV)-Verfahren) sowie das Finanzgericht Düsseldorf in einem Urteil aus dem Jahr 1990 (erstinstanzliche Entscheidung) an. Diese äußerten Zweifel darüber, ob durch die Zahlung von Transferentschädigungen immaterielle Wirtschaftsgüter entgeltlich erworben wurden (vgl. BFH, Urteil v. 13.05.1987, a.a.O.; FG Düsseldorf, Urteil v. 28.11.1990, a.a.O.; Littkemann & Schaarschmidt, 2002, S.

373 Fn. 2). Im abschließenden Urteil aus dem Jahr 1992 korrigierte der BFH seine vorherige Sichtweise und argumentierte für das Vorliegen eines Wirtschaftsgutes (vgl. Littkemann & Schaarschmidt, 2002, S. 373).

Bevor die Argumente des BFH aufgeführt werden, ist eine kurze Darstellung des damaligen Transfersystems notwendig. So hatte der abgebende Club immer ein Anrecht auf eine Transferentschädigung, wenn der Spieler den Club verließ, unabhängig davon, ob der Vertrag des Spielers ausgelaufen war oder vorzeitig beendet wurde. Die Höhe der Transferentschädigung wurde jedoch von dieser Unterscheidung beeinflusst, denn bei einem vorzeitigen Wechsel verhandelten die Clubs frei und der abgebende Club war nicht verpflichtet, den Spieler vorzeitig abzugeben. War der Vertrag ausgelaufen, setzte der DFB die Höhe der Transferentschädigung durch Schiedsgutachten fest, wenn sich die Clubs nicht einigen konnten. Dafür wurde eine Formel mit club- und spielerspezifischen Parametern benutzt. Das Anrecht auf Transferentschädigung entstand mit Inkrafttreten des neuen Arbeitsvertrages (vgl. BFH, Urteil v. 13.05.1987, a.a.O.; FG Düsseldorf, Urteil v. 28.11.1990, a.a.O; Deutsche Fußball Liga, 2021).

Der BFH begründet die Einstufung als konzessionsähnliches Recht damit, dass die Spielerlaubnis keine „richtige" Konzession sein kann. Diese Meinung teilen auch Kritiker des Urteils (vgl. Hüttemann, 1994, S. 491). Eine Konzession liegt bei behördlichen Genehmigungen für die Ausübung bestimmter Tätigkeiten vor. Dennoch werden alle übrigen Kriterien erfüllt. So wird die Spielerlaubnis befristet erteilt (bis Ablauf des Vertrages zwischen Club und Spieler) und hat Erlaubnischarakter, da der Club das Recht erlangt, den Spieler in der Mannschaft einzusetzen. Ferner klassifiziert der BFH die Spielerlaubnis als selbstständig und mit dem Betrieb verkehrsfähig, da es auf die abstrakte Verkehrsfähigkeit ankommt. Es reicht aus, wenn der Rechtsverkehr Möglichkeiten entwickelt hat, die Spielerlaubnis wirtschaftlich zu übertragen (vgl. BFH, Urteil v. 26.08.1992, a.a.O.). Dafür zitiert der BFH ein vorheriges Urteil bezüglich der Übertragung einer Güterfernverkehrsgenehmigung, in dem die Verkehrsfähigkeit bejaht wurde, weil auf die Konzession zugunsten eines anderen Unternehmens verzichtet wurde (vgl. Hüttemann, 1994, S. 492). Obwohl die Spielerlaubnis rechtlich nicht übertragen werden kann und durch den aufnehmenden Club neu beantragt werden muss, trägt der abgebende Club durch die Vertragsaufhebung dazu bei (vgl. BFH, Urteil v. 26.08.1992, a.a.O.).

Der BFH konkretisiert die Verkehrsfähigkeit damit, dass der Club während der Vertragsdauer eine Rechtsposition hat, über die er wirtschaftlich frei verfügt. So kann der Club durch die Vertragsaufhebung eine Transferentschädigung erhalten. Obwohl der Spieler der vorzeitigen Vertragsaufhebung zustimmen muss, reicht es aus, dass der Club mitbestimmen kann, ob der Spieler den Vertrag erfüllt oder nicht. Darüber hinaus ist die Spielerlaubnis zumindest mit dem Betrieb übertragbar. Die Verkehrsfähigkeit und damit auch der immaterielle Vermögensgegenstand geht jedoch mit Auslauf oder vorzeitiger Aufhebung des Vertrages unter, da in den Fällen die Spielerlaubnis erlischt. Die selbstständige Bewertbarkeit der Spielerlaubnis bemisst sich nicht am Wert der Arbeitsleistung des Spielers, welcher Gegenstand des Arbeitsvertrages ist, sondern an der Möglichkeit für die Auflösung des Arbeitsvertrages eine Ablösezahlung zu erhalten. Die Höhe richtet sich nach den vom DFB entwickelten Grundsätzen. Da diese club- und spielerspezifisch sind, kann für jeden Spieler ein individueller Transferwert ermittelt werden, sodass die selbstständige Bewertbarkeit zu bejahen ist (vgl. ebd.).

Es liegt auch ein abgeleiteter Erwerb vor, da ein innerer Zusammenhang zwischen der Transferentschädigung und der Spielerlaubnis besteht. Dieser ist maßgeblich für die Frage, ob ein entgeltlicher Erwerb vorliegt, wodurch die selbstständige Bewertbarkeit bejaht werden kann (vgl. Hüttemann, 1994, S. 492.) Die Transferentschädigung resultiert durch den Erwerb der Spielerlaubnis. Obwohl die Pflicht zur Zahlung der Ablösesumme (mit Inkrafttreten des neuen Arbeitsvertrages) zeitlich vor Erteilung der Spielerlaubnis entsteht, ist ein so enger Veranlassungszusammenhang gegeben, der die Betrachtung der Transferentschädigung als Anschaffungskosten der Spielerlaubnis rechtfertigt. Ferner geht durch die Transferentschädigung der Vorteil, einen Spieler in der Lizenzmannschaft einsetzen zu können, vom abgebenden auf den aufnehmenden Club über. Die durch das Lizenzspielerstatut eingeräumte vorrangige Verhandlungsfreiheit, aber auch die durch Schiedsgutachten festgesetzte Transferentschädigung bestätigt den Wert des Spielers am Markt (Entgeltlichkeit) und widerlegt somit den Einwand, dass durch die Zahlung lediglich ein für den abgebenden Club resultierender Nachteil kompensiert wird (vgl. BFH, Urteil v. 26.08.1992, a.a.O.).

Obwohl einige Argumente des BFH plausibel klingen, werden folgend berechtigte Einwände aufgeführt. Die Begründung der selbstständigen Verkehrsfähigkeit ist fraglich, da diese bejaht wird, weil der Club mitbestimmen kann, ob der Spieler den Club vorzeitig entlässt oder nicht. Der Spieler ist Träger von Rechten und wird nicht durch den Club beherrscht, da er kein reines Rechtsobjekt ist. Die abstrakte Einzelverkehrsfähigkeit kollidiert mit fundamentalem originärem Menschenrecht, welches nie eingeschränkt werden kann. Es fehlt an der Herrschaftsmacht des Vereins am Spieler, sodass dieser seine Zustimmung zu einem vorzeitigen Transfer verweigern kann (vgl. Steiner & Gross, 2005, S. 534). Die Übertragbarkeit mit dem Betrieb zusammen ist zwar gegeben, reicht aber „nur" zur Begründung eines Wirtschaftsgutes aus. Ferner kann die Arbeitsleistung, die aufgrund des Arbeitsvertrages erbracht werden muss, nicht Gegenstand eines Kaufvertrages sein und zudem gibt die Spielerlaubnis dem Club auch nicht mehr Rechte als der Arbeitsvertrag. Insbesondere das Recht zum Einsatz und der Möglichkeit der vorzeitigen Vertragsauflösung resultieren aus diesem (vgl. Jansen, 1992, S. 1786 f.).

Trotz berechtigter Zweifel wurde die Sichtweise durch den Bundesfinanzhof im Jahr 2011 bestätigt. Daraus folgt, dass es sich bei der Aktivierung von Spielerwerten um gefestigte Rechtsprechung handelt (vgl. Schiffers & Feldgen, 2015, S. 500), die einen anderen Ansatz oder sogar Nicht-Ansatz

nicht zulässt. Von zentraler Bedeutung ist das Bosman-Urteil aus dem Jahr 1995, das Anlass des jüngeren BFH-Urteils ist (vgl. BFH, Urteil v. 14.12.2011, a.a.O.). Der Europäische Gerichtshof (EuGH) entschied, dass der Wechsel eines Berufsfußballspielers zu einem Club eines anderen Mitgliedsstaates der Europäischen Union an keine Transfer-, Ausbildungs- oder Förderentschädigung geknüpft sein darf, wenn der Vertrag des Spielers ausgelaufen ist. Ferner werden Regeln von Sportverbänden bezüglich der Limitierung von ausländischen Berufsspielern in veranstalteten Wettbewerben für unzulässig erklärt. Beides verstößt gegen die Freizügigkeit der Arbeitnehmer, die damals in Artikel 48 EWG-Vertrag verankert war (vgl. Söffing, 1996, S. 523; EuGH, Urteil v. 15.12.1995, C-415/93, Neue Juristische Wochenschrift (NJW) 1996, S. 505).

Das Urteil wurde im November 1996 in nationales Recht übernommen, woraufhin das Bundesarbeitsgericht in Kassel Transferentschädigungen für Spieler mit ausgelaufenen Verträgen untersagte, da dies die Berufsfreiheit von Sportlern einschränkt. Davon ausgenommen sind Spieler mit gültigen Verträgen, da Clubs die Verträge ansonsten nicht vorzeitig aufheben. In der Praxis konnte beobachtet werden, dass Zahlungen von Transferentschädigungen in Folge nicht abnahmen, da Clubs nun längere Verträge mit Spielern unterschrieben, um weiterhin Transferentschädigungen zu erhalten. Der DFB reagierte auf die neue Rechtslage und strich den Anspruch des abgebenden Clubs auf eine Transferentschädigung bei einem Spielerwechsel. Dadurch fiel ein maßgebliches Argument des BFH für die Aktivierbarkeit von Spielerlaubnissen weg (vgl. Littkemann & Schaarschmidt, 2002, S. 373). Söffing (1996, S. 524) folgert dadurch, dass bei einem ablösefreien Transfer kein Anschaffungsvorgang vorliegt und die Spielerlaubnis folglich nicht aktiviert werden darf. Littkemann und Schaarschmidt (2002, S. 373) gehen weiter und folgern, dass durch den verbandsrechtlichen Wegfall des Erfordernisses einer Transferentschädigung, die Spielerlaubnis gar nicht mehr aktivierbar ist, auch wenn eine Transferentschädigung geleistet wird. Diese müsse nun vollumfänglich als Aufwand verbucht werden. Trotz der geänderten Rechtslage wurden Transferentschädigungen weiterhin aktiviert, da Spielerwerte einen wesentlichen Teil der Bilanzen ausmachen und Clubs ohne diese bilanziell überschuldet sind (vgl. Trommer 1999, zitiert nach Steiner & Gross, 2005, S. 535).

Interessant ist, dass der BFH in seinem Urteil aus dem Jahr 2011 statt „Transferentschädigung" das Wort „Ablösezahlung" benutzt. In den vorherigen Urteilen wird der erstere Begriff verwendet. Vermutlich wird dies getan, da der BFH gerade damit argumentiert, dass es sich bei der Transferentschädigung bzw. Ablösezahlung nicht um eine „bloße" Entschädigungszahlung handelt, sondern ein immaterielles Wirtschaftsgut entgeltlich erworben wird. Anlass des Urteils aus dem Jahr 2011 ist ebenfalls ein Streit zwischen einem Bundesligisten und dem Finanzamt. Der Bundesligist vertrat die Meinung, dass in Folge des Bosman-Urteils die Spielerlaubnis nicht mehr aktivierungsfähig bzw. -pflichtig war und schrieb diese vollumfänglich ab. Im Zuge des Urteils nimmt der BFH auch Stellung zu einigen Kritikpunkten in der Lite-

ratur, die sich auf das Urteil aus 1992 beziehen (vgl. BFH, Urteil v. 14.12.2011, a.a.O.).

Das Gegenargument, dass die Rechte des Clubs im Grunde durch den Arbeitsvertrag resultieren, widerlegt der BFH damit, dass die exklusive Nutzungsmöglichkeit des Lizenzspielers über die bloßen Rechte und Pflichten des Arbeitsvertrages hinausgeht, welche nach den Grundsätzen für schwebende Vertragsverhältnisse einem Aktivierungsverbot unterliegen (so auch schon bereits im Urteil aus dem Jahr 1992). Obwohl der Spieler aufgrund des Arbeitsvertrages zur Arbeitsleistung verpflichtet ist, geht der für den Club verbundene Vorteil, den Lizenzspieler exklusiv nutzen zu können, über die mit dem Spielergehalt kompensierte Arbeitsleistung hinaus. Das Wertpotenzial durch die verbandsrechtliche Absicherung der Spielerlaubnis und das verbandsrechtlich organisierte Transfersystem, das aus einem Markt für Ein- und Verkauf von Lizenzspielern besteht, ist losgelöst von den Arbeitspflichten des Arbeitsvertrages und daher ein eigenständiges Wirtschaftsgut (vgl. BFH, Urteil v. 14.12.2011, a.a.O.).

An der Argumentation der selbstständigen Verkehrsfähigkeit hält der BFH fest. Diese hat an Bedeutung gewonnen, da in Folge des Bosman-Urteils längere Arbeitsverträge geschlossen werden, wodurch der Club länger über eine vorzeitige Auflösung mitbestimmen kann. Ferner stützt der verbandsrechtliche Wegfall und die damit verbundene freie Verhandlung der Ablösesumme den Entgeltcharakter und untermauert, dass diese den Preis für die Übertragung bzw. den Erwerb der exklusiven Nutzungsmöglichkeit darstellt. In der Praxis beobachtbare unterschiedliche Ablösehöhen sind Indiz, dass ein potenzieller Erwerber des Unternehmens den Spielerwert entsprechend honorieren würde. Daher ist die Spielerlaubnis selbstständig bewertbar. Die Bewertung bemisst sich nicht nach der Arbeitsleistung bzw. dem Wert des Menschen, was verfassungswidrig ist, sondern auf den vermögenswerten Vorteil, den Spieler während der Vertragslaufzeit exklusiv einzusetzen (vgl. BFH, Urteil v. 14.12.2011, a.a.O.). Insgesamt erscheint durch die jüngste Rechtsprechung des BFH die Aktivierbarkeit von Spielerlaubnissen plausibler begründet, aber die Bejahung der selbstständigen Verkehrsfähigkeit bleibt weiterhin fraglich.

### 3.3. Bilanzierungsfähigkeit nach den IFRS

Nach dem „Conceptual Framework" der IFRS enthält die Bilanz alle mit der Ermittlung der Vermögens- und Finanzlage verbundenen Posten. Das sind die Vermögenswerte (assets), Schulden (liabilities) und das Eigenkapital (vgl. Petersen, Bansbach & Dornbach, 2019, S. 50). Während die Terminologie im Handelsrecht Vermögensgegenstand lautet, wird in den IFRS der Begriff Vermögenswert genutzt. Im Gegensatz zum Handelsrecht befinden sich in den IFRS explizite Kriterien mit Erläuterungen, die einen Vermögenswert bzw. einen immateriellen Vermögenswert begründen. Für die Spielerlaubnis ist IAS 38: Immaterielle Vermögenswerte maßgeblich, da die Regelungen des „Conceptual Frameworks" aufgrund der Normenhierarchie subsidiär zu den einzelnen Standards sind. Die Kriterien eines immateriellen Vermögenswertes gehen über die von Vermögenswerten

hinaus, da Unsicherheiten bezüglich der Abgrenzung zum nicht aktivierungsfähigen originären „Goodwill" bestehen (vgl. Petersen et al., 2019, S. 51 f.).

IAS 38 gilt nicht für immaterielle Vermögenswerte, die explizit in anderen Standards des International Accounting Standards Board (IASB) behandelt werden (vgl. IAS 38.2). Dies ist bei der Spielerlaubnis nicht der Fall, sodass die Bestimmungen des IAS 38 maßgeblich sind. So handelt es sich grundsätzlich um einen Vermögenswert, wenn die Ressource aufgrund von Ereignissen der Vergangenheit durch das Unternehmen beherrscht wird und ein zukünftiger wirtschaftlicher Nutzenzufluss für das Unternehmen erwartbar ist (vgl. IAS 38.8). Das überarbeitete „Conceptual Framework" enthält eine neuere Definition von Vermögenswerten, die hier nicht thematisiert wird, da IAS 38 einschlägig ist. „Ein immaterieller Vermögenswert ist ein identifizierbarer, nicht monetärer Vermögenswert ohne physische Substanz." (IAS 38.8). Demnach werden die Definitionskriterien, Beherrschung und ein zukünftiger ökonomischer Nutzenzufluss, für immaterielle Vermögenswerte durch die Identifizierbarkeit erweitert (vgl. IAS 38.10).

Identifizierbarkeit liegt gemäß IAS 38.11 vor, wenn der immaterielle Vermögenswert vom Geschäfts- oder Firmenwert unterscheidbar ist. Davon wird ausgegangen, wenn der Wert separierbar ist, also getrennt vom Unternehmen „verkauft, übertragen, lizenziert, vermietet oder getauscht werden kann.". Dies kann auch „in Verbindung mit einem Vertrag, einem identifizierbaren Vermögenswert oder einer identifizierbaren Schuld" erfolgen. Es muss nur die theoretische Möglichkeit gegeben sein (IAS 38.12a). Identifizierbar ist die Ressource darüber hinaus, wenn diese „aus vertraglichen oder anderen gesetzlichen Rechten entsteht, unabhängig davon, ob diese Rechte vom Unternehmen oder von anderen Rechten und Verpflichtungen übertragbar oder separierbar sind." (IAS 38.12b). Letzteres erleichtert die Prüfung, da sich nach IAS 38.12a die Frage der Verkehrsfähigkeit stellt. Die Identifizierbarkeit der Spielerlaubnis kann problemlos mit IAS 38.12b bejaht werden, da der wirtschaftliche Vorteil, den Spieler einzusetzen, durch Abschluss eines Arbeitsvertrages begründet wird (vgl. Homberg, Elter & Rothenburger, 2004, S. 253).

Die Ressource wird beherrscht bzw. das Unternehmen hat die Verfügungsgewalt, wenn das Unternehmen sicherstellen kann, dass ihm der zukünftige ökonomischen Nutzen zufließt und andere von der Nutzung ausgeschlossen werden können (vgl. IAS 38.13). Aufgrund der verbandsrechtlichen Absicherung der Spielerlaubnis und des dem zugrunde liegenden Arbeitsvertrages kann nur der Club den Spieler während der Vertragslaufzeit einsetzen, sodass Beherrschung zu bejahen ist (vgl. Homberg et al., 2004, S. 253). Der künftige wirtschaftliche Nutzen ist begriffstechnisch sehr breit definiert und grundsätzlich gegeben, wenn das Unternehmen wirtschaftliche Vorteile durch den Vermögenswert erwarten kann (vgl. IAS 38.17). Der wirtschaftliche Nutzen ergibt sich durch die mit der Spielerlaubnis verbundenen, verbandsrechtlich abgesicherten, Einsatzmöglichkeit des Spielers. So kann der Club von den fußballerischen Fähigkeiten des Spielers profi-

tieren oder im Falle eines Weiterkaufs während der Vertragslaufzeit eine Ablösezahlung erhalten (vgl. Homberg et al., 2004, S. 253 f.).

Ein Ansatzgebot für immaterielle Vermögenswerte besteht nur dann, wenn diese in den Anwendungsbereich von IAS 38 fallen und zusätzlich zu den genannten Definitionskriterien die folgenden Ansatzkriterien kumulativ erfüllen. Wird eines der Kriterien nicht erfüllt, besteht ein Ansatzverbot. Die Aufwendungen, die im Zusammenhang mit dem immateriellen Vermögenswert anfallen, müssen in dem Fall sofort erfolgswirksam verbucht werden (vgl. Böcking & Wiederhold, 2014, IAS 38 Rn. 40, 43; IAS 38.18; IAS 38.68). Die folgenden Ansatzkriterien gelten für Anschaffungs- und Herstellungskosten, die beim erstmaligen Erwerb oder der internen Herstellung von immateriellen Vermögenswerten entstehen sowie für nachträgliche Kosten (vgl. IAS 38.18). Darüber hinaus wird zwischen dem Zugang durch Unternehmenszusammenschluss, Zuwendung der öffentlichen Hand, Tausch und selbst geschaffenem Geschäfts- oder Firmenwert unterschieden. Für die Zugangsarten existieren gesonderte Ansatzkriterien und/oder Bewertungsvorschriften (vgl. IAS 38.19).

Die Ansatzkriterien für gesondert erworbene (Zahlung Transferentschädigung) und selbst geschaffene immaterielle Vermögenswerte besagen, dass ein Ansatz nur erfolgen darf, wenn der zukünftige Nutzenzufluss wahrscheinlich ist und die Anschaffungs- oder Herstellungskosten verlässlich bewertbar sind (vgl. IAS 38.21). Im Falle des gesonderten Erwerbs ist grundsätzlich vom zukünftigen wirtschaftlichen Nutzen auszugehen, da der Preis die Erwartung über die Wahrscheinlichkeit des Nutzenzuflusses reflektiert (vgl. IAS 38.25). Ferner kann in dem Fall von der verlässlichen Bewertbarkeit der Anschaffungskosten ausgegangen werden, insb. dann, „wenn der Erwerbpreis in Form von Zahlungsmitteln oder sonstigen monetären Vermögenswerten beglichen wird." (IAS 38.26). Folglich erfüllt die Spielerlaubnis im ablösepflichtigen Fall die Kriterien eines gesondert erworbenen immateriellen Vermögenswertes und ist daher aktivierungspflichtig.

### 3.4. Sonderfall: Aktivierbarkeit von Jugendspielern nach HGB und IFRS

Während das Handelsrecht ein Wahlrecht für selbst geschaffene immaterielle Vermögensgegenstände beinhaltet (vgl. § 248 Abs. 2 S. 1 HGB), müssen selbst geschaffene immaterielle Vermögenswerte nach den IFRS aktiviert werden, wenn die Kriterien erfüllt werden. In beiden Rechnungslegungsstandards werden diese mit ihren Herstellungskosten bewertet (vgl. § 255 Abs. 2a S. 1 HGB; IAS 38.24). Sowohl Handelsrecht als auch die IFRS erfordern dafür die klare Abgrenzung zwischen einer Forschungs- und Entwicklungsphase. Können diese nicht getrennt werden, gelten die Aufwendungen als Forschungsaufwand und sind folglich nicht aktivierungsfähig. Die Entwicklungsphase baut auf der Forschungs- bzw. auf den Forschungsergebnissen auf und lässt im Gegensatz wirtschaftliche Erfolgsaussichten (Handelsrecht) bzw. einen voraussichtlichen künftigen wirtschaft-

lichen Nutzen (IFRS) erkennen. Forschungsaufwendungen hingegen dürfen nicht aktiviert werden (vgl. § 255 Abs. 2a HGB; IAS 38.52-55).

Zu den Herstellungskosten nach Handelsrecht zählen die Aufwendungen, die zur Herstellung, Erweiterung oder wesentlichen Verbesserung eines Vermögensgegenstandes aufgebracht werden. Dazu zählen neben den Einzelkosten auch angemessene Teile spezifischer Gemeinkosten, die durch die Herstellung veranlasst sind und angemessene Teile spezifischer Gemeinkosten, die im Zeitraum der Herstellung entstehen (vgl. § 255 Abs. 2 HGB). Zu den Herstellungskosten von selbst geschaffenen immateriellen Vermögenswerten zählen Einzelkosten, die aufgewendet werden, um den Vermögenswert für den vom Management geplanten Gebrauch zu entwerfen, herzustellen oder vorzubereiten. Ferner zählen Gemeinkosten dazu, welche die Nutzung des Vermögenswertes vorbereiten (vgl. IAS 38.66, 38.67a). Die Spielerlaubnis fällt nicht unter die Ansatzverbote für spezifische selbstgeschaffene immaterielle Vermögensgegenstände bzw. -werte der Rechnungslegungsstandards (vgl. § 248 Abs. 2 S. 2 HGB; IAS 38.63).

Die Ansatzkriterien immaterieller Vermögenswerte werden für selbstgeschaffene durch IAS 38.57 erweitert. Nach IAS 38.65 zählen zu den Herstellungskosten nur Kosten, die zeitlich ab der kumulativen Erfüllung der Ansatzkriterien entstehen. Der Herstellungszeitraum beginnt folglich, wenn ein ansatzpflichtiger immaterieller Vermögenswert besteht (vgl. Böcking & Wiederhold, 2014, IAS 38 Rn. 112). Dies gilt aufgrund des Vollständigkeitsgrundsatzes in § 246 Abs. 1 S. 1 HGB für selbst geschaffene immaterielle Vermögensgegenstände analog. Ein Vermögensgegenstand existiert folglich nicht immer bei Beginn der Entwicklungsphase. Davon sind in der Entwicklung stehende immaterielle Güter stärker als materielle Güter betroffen, da diese bereits im unfertigen Zustand grundsätzlich die Kriterien eines Vermögensgegenstandes erfüllen (vgl. Hennrichs, 2013, § 248 HGB Rn. 36 f.).

Für die Aktivierbarkeit der Herstellungskosten von Jugendspielern müssen Kriterien abgeleitet werden, die eine Erfolgsaussicht bzw. einen zukünftigen ökonomischen Nutzen annehmen lassen und sich von Aufwendungen der Forschungsphase unterscheiden. Rade und Stobbe (2009, S. 1110 f., 1113 f.) differenzieren dafür zwischen Leistungszentren, die Bundesligisten gemäß Anhang V Lizenzierungsordnung unterhalten müssen. Dies erfolgt aufgrund unterschiedlicher Ausbildungsinhalte in den jeweiligen Klassen. Es wird zwischen F- und E-Junioren (Grundlagenbereich), D- und C-Junioren (Aufbaubereich) und B- und A-Junioren sowie Amateuren (Leistungsbereich) unterschieden. Da erst im Leistungsbereich Aufwendungen getätigt werden, die darauf abzielen, einen Profi-Vertrag mit dem Spieler zu unterzeichnen und damit den wirtschaftlichen Vorteil zu erlangen, kann dieser als Entwicklungsphase identifiziert werden (vgl. Teschke et al., 2012, S. 1140).

Um wirtschaftliche Erfolgsaussichten bzw. einen voraussichtlichen künftigen wirtschaftlichen Nutzen festzustellen, sind zuverlässige Prognosen über zukünftige Einsatzmöglich-keiten des Spielers zu treffen. Dabei sind Indizien wie Zugehörigkeit zu einer Jugend-Nationalmannschaft zu berücksichtigen. Ab dem Leistungsbereich beträgt die Zeit bis zum Herstellungsende ca. 2-6 Jahre, welcher den erstmaligen Einsatz in der Lizenzmannschaft bildet (vgl. Rade & Stobbe, 2009, S. 1113 f.). Homberg et al. (2004, S. 261) sprechen in dem Zusammenhang von Aus- und Weiterbildungs- statt Entwicklungskosten. Problematisch ist, dass nach beiden Standards Erhaltungsaufwendungen nicht zu den Herstellungskosten zählen (vgl. Schubert & Hutzler, 2020, § 255 HGB Rn. 331, 375; IAS 38.51b), da im Trainingsbetrieb einerseits fußballerische Fähigkeiten entwickelt werden, aber andererseits auch regenerative Maßnahmen erfolgen. Eine (verlässliche) Ermittlung der Herstellungskosten ist daher nicht anzunehmen. Sollte dies doch möglich sein, setzt die Aktivierung von Entwicklungskosten einen Vertrag mit dem Spieler voraus, da andernfalls keine Verfügungsmacht bzw. kein immaterieller Vermögenswert existiert (vgl. Homberg et al., 2004, S. 261 f.).

Auch nach Handelsrecht muss ein Vertrag geschlossen werden, da sofern die Verkehrsfähigkeit überhaupt angenommen werden kann, diese dadurch begründet wird. Es gilt zu beachten, dass nach Anhang V Lizenzierungsordnung nur mit Spielern, die das 15. Lebensjahr vollendet haben, ein Vertrag geschlossen werden kann. Verträge von Jugend- und Amateurspielern orientieren grundsätzlich am Mustervertrag für Lizenzspieler und beinhalten ebenfalls Klauseln über die Verwertung von Persönlichkeitsrechten (vgl. Rade & Stobbe, 2009, S. 1111).

## 4. Bilanzielle Bewertung von Spielerwerten

### 4.1. Zugangsbewertung nach HGB und IFRS

#### 4.1.1. „Erwerb" eines Fußballspielers

Während bei einem ablösepflichtigen Spieler die Ablösezahlung nach gefestigter Rechtsprechung des BFH als Anschaffungskosten der Spielerlaubnis zu klassifizieren ist (vgl. Kapitel 3.2), stellt sich die Frage, ob Zahlungen an Spielerberater und Handgelder ebenfalls als Anschaffungskosten der Spielerlaubnis aktivierbar sind. Die Rolle von Spielerberatern ist umstritten. Diese haben heutzutage großen Einfluss auf ihre Mandanten und insbesondere darüber, ob und wohin diese wechseln. „Geldgieriger Piranhaì', so bezeichnete Uli Hoeneß, der damalige Präsident des FC Bayern München, den Berater von David Alaba nach dessen gescheiterter Vertragsverlängerung (Uli Hoeneß 2020, zitiert nach Süddeutsche Zeitung (2020)).

Nach § 255 Abs. 1 S. 2 HGB gehören zu den Anschaffungskosten auch Nebenkosten und nachträgliche Anschaffungskosten. „Anschaffungsnebenkosten sind dem erworbenen Vermögensgegenstand einzeln zurechenbare Kosten, die mit dem Erwerb des Vermögensgegenstandes verbunden sind." (Tiedchen, 2013, § 255 HGB Rn. 25). So gehören unter anderem Vermittlungs- und Maklergebühren zu den typischen Nebenkosten (vgl. ebd., Rn. 26). Als diese erachtet der BFH

auch Provisionszahlungen an Spielerberater. Vermittlungsprovisionen können dem Anschaffungsvorgang einzeln zugerechnet werden und sind zur Erlangung erforderlich (vgl. BFH, Urteil v. 14.12.2011, a.a.O.).

Bei einem Handgeld ist zu unterscheiden, ob es eine Gehaltsvorauszahlung darstellt oder für den Abschluss des Vertrages notwendig ist. Bei ersterem ist ein aktiver Rechnungsabgrenzungsposten (ARAP) zu bilden und über die Vertragsdauer als Personalaufwand aufzulösen. Wird das Handgeld für den Vertragsabschluss gezahlt, ist dieses als Anschaffungsnebenkosten aktivierungspflichtig (vgl. Schiffers & Feldgen, 2015, S. 502). Nach den IFRS gehören zu den Anschaffungskosten von gesondert erworbenen immateriellen Vermögenswerten auch Nebenkosten, die direkt zurechenbar sind und zur Vorbereitung des Vermögenswertes auf seine beabsichtigte Nutzung dienen (vgl. IAS 38.27b; Böcking & Wiederhold, 2014, IAS 38 Rn. 88). Im Ergebnis sind somit Provisionen und Handgelder nach den IFRS analog zu behandeln (vgl. Homberg et al., 2004, S. 254 f.).

Nach Handelsrecht wird ein Vermögensgegenstand in dem Zeitpunkt aktiviert, in dem die wirtschaftliche Verfügungsmacht erlangt wird, d.h. wenn nach dem Willen beider Vertragspartner der Erwerber über diesen verfügen kann. Dabei gehen „Eigenbesitz, Gefahren, Nutzen und Lasten" auf den Erwerber über und folglich wechselt der Vermögensgegenstand von der Bilanz des Verkäufers in die Bilanz des Käufers (Schubert & Gadek, 2020, § 255 Rn. 31). Nach IAS 38.21 darf ein (immaterieller) Vermögenswert erst ab Erfüllen der Ansatzkriterien aktiviert werden (vgl. Kapitel 3.3). Daraus folgt insbesondere, dass die Verfügungsmacht über den immateriellen Vermögenswert auf den Erwerber übergehen muss (vgl. PricewaterhouseCoopers (PwC) 2018, S. 2).

Als Anschaffungszeitpunkt gilt nach beiden Standards der Tag, an dem die letzte aufschiebende substanzielle Bedingung des Transfervertrages erfüllt wird. Dadurch wird der abgebende Club geschützt, da andernfalls alle getroffenen Vereinbarungen nichtig sind und der Spieler beim Club verbleibt. Zu den substanziellen Bedingungen zählen das Aufheben des Arbeitsvertrages, Bestehen der sportmedizinischen Untersuchung und die Vertragsunterzeichnung beim aufnehmenden Club. Die Einhaltung verbandsrechtlicher Formalia (Antragstellung und Hochladen der erforderlichen Unterlagen) ist zwar ebenfalls eine aufschiebende Bedingung, aber „nur" Formsache. Das wirtschaftliche Eigentum (HGB) bzw. die Verfügungsmacht (IFRS) geht mit der kumulativen Erfüllung der substanziellen Bedingungen vom abgebenden auf den aufnehmenden Club über. Nach den IFRS gilt der Zufluss des zukünftigen ökonomischen Nutzens ab dem Moment als wahrscheinlich (vgl. Schröder & Specht, 2020, S. 960, 964 f.). Abbildung 1 illustriert die für einen Transfer notwendigen Vereinbarungen.

Nachfolgend wir noch darauf eingegangen, ob Provisionen und Handgelder im Falle einer ablösefreien Verpflichtung aktivierungsfähig bzw. -pflichtig sind. Nach dem Steuerrecht muss ein entgeltlicher Erwerb vorliegen (vgl. Kapitel 3.2). Ein Erwerb ist im ablösefreien Fall zu verneinen, da

kein existierendes Wirtschaftsgut (Spielerlaubnis erlischt mit Vertragsende) „erworben" wird. Zwar wird das Wirtschaftsgut durch Abschluss des Vertrages durch die DFL geschaffen, aber in dem Fall müssen die wesentlichen Bestandteile aus dem Vermögen anderer stammen, was nicht der Fall ist, da die Spielerlaubnis zuvor nicht bestand. Ferner liegt keine Entgeltlichkeit vor, da Vermittlungsprovisionen und Handgelder nicht als Gegenleistung klassifiziert werden können und „lediglich" erfolgen, um den Vertrag abzuschließen. Daher verneint der BFH in seinem Urteil aus 2011 die Aktivierbarkeit von Provisionszahlungen im ablösefreien Fall (vgl. Schiffers & Feldgen, 2015, S. 505). Nach Handelsrecht wird zwar keine Entgeltlichkeit, aber ein Anschaffungsvorgang vorausgesetzt (vgl. Kapitel 3.2).

Während somit das Fehlen einer Ablösezahlung (Gegenleistung = Entgeltlichkeit) nach Handelsrecht die Aktivierbarkeit im ablösefreien Fall nicht versagt, scheitert diese daran, dass kein existierender Vermögensgegenstand angeschafft bzw. erworben wird. Demnach sind Provisionen und Handgelder im ablösefreien Fall als Aufwand zu verbuchen. Stellt das Handgeld eine Gehaltsvorauszahlung dar, ist ein ARAP zu bilden (vgl. Schiffers & Feldgen, 2015, S. 502). Die Bewertung eines gesondert angeschafften immateriellen Vermögenswertes erfolgt zu seinen Anschaffungskosten (vgl. IAS 38.24). Diese werden als der zum Erwerb eines Vermögenswertes entrichtete Betrag definiert (vgl. IAS 38.8). Somit wird analog ein Anschaffungsvorgang vorausgesetzt, wodurch Provisionen und Handgelder im ablösefreien Fall auch nach den IFRS nicht aktiviert werden dürfen.

Schröder und Specht (2020, S. 960) vertreten den gegenläufigen Standpunkt, sodass die Thematik sicherlich noch nicht abschließend geklärt ist. Es stellt sich die Frage, ob die Spielerlaubnis im ablösefreien Fall selbst geschaffen wird und Provisionen und Handgelder folglich als Herstellungskosten aktiviert werden können bzw. müssen. Da nach beiden Standards Entwicklungskosten erst ab Vorliegen eines immateriellen Vermögensgegenstandes bzw. -wertes aktiviert werden dürfen und diese erst durch die Zahlungen entstehen, scheint eine Aktivierung als Entwicklungskosten ausgeschlossen. Danach findet auch keine „Entwicklung" mehr statt. Diese Thematik bedarf aber sicherlich einer näheren Betrachtung, sodass hierzu kein abschließendes Urteil getroffen wird.

### 4.1.2. Leihe statt Kauf – Bewertung von Leihgeschäften

Spielerleihen sind heutzutage nicht untypisch und mit Vorteilen für die beteiligten Parteien verbunden. Insbesondere jüngere Spieler können hierdurch Spielpraxis sammeln, wodurch der verleihende Club bei dessen Rückkehr profitiert. Der ausleihende Club erhält für „wenig" Geld einen neuen Spieler. Verbandsrechtlich wird die exklusive Nutzungsmöglichkeit des Spielers für die Dauer der Leihe dem ausleihenden Club überlassen und folglich ein Ruhen des Arbeitsverhältnisses vereinbart, in Folge die Spielerlaubnis erlischt und durch den ausleihenden Club beantragt wird. Dieser schließt dafür einen Arbeitsvertrag mit dem Spieler. Während der Spieler somit während der Leihe arbeitsrechtlich dem ausleihenden Club zugehört, verbleiben seine Transfer-
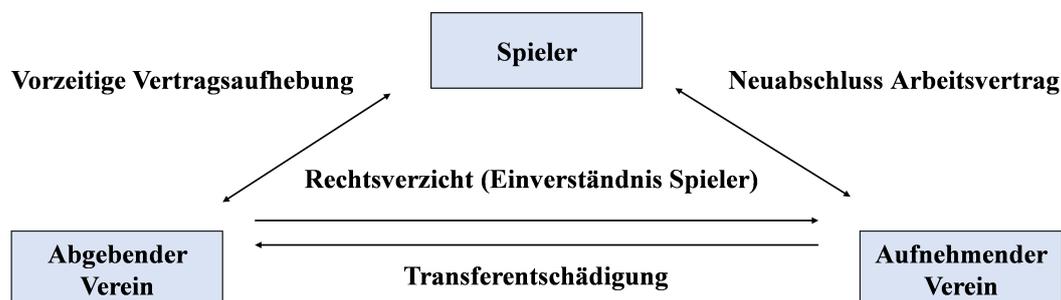
**Abbildung 1:** Die notwendigen Vereinbarungen für einen Spieler-Transfer, in Anlehnung an Rade & Stobbe, 2009, S. 1110.

rechte i.d.R. beim verleihenden Club nach § 5 Nr. 2 Satz 6 LOS (vgl. Weber, 2016, S. 248 f.; Schiffers & Feldgen, 2015, S. 506).

Ob der Spielerwert in der Bilanz des verleihenden Clubs verbleibt oder in die des ausleihenden aufgenommen wird, ist nach Handelsrecht davon abhängig, wer während des Leihzeitraumes wirtschaftlicher Eigentümer ist. Für die Definition des wirtschaftlichen Eigentums verweise ich auf Kapitel 3.2. Die wirtschaftliche Nutzungsdauer der Spielerlaubnis entspricht grundsätzlich der Vertragsdauer zwischen dem verleihenden Club und dem Spieler. Bei einer Leihe wird das Recht den Spieler einzusetzen abgetreten, wodurch der ausleihende Club die Spielerlaubnis für den Leihzeitraum beantragt und erhält. Da die Spielerlaubnis mit Ablauf der Leihe erlischt, könnte man vermuten, dass die für den Sachverhalt relevante wirtschaftliche Nutzungsdauer auf die Leihdauer begrenzt ist. Dies wäre aber irreführend, da in dem Zeitraum nur der ausleihende Club die Nutzungsmöglichkeit besitzt. Daher ist der Zeitraum ab der Leihe bis zum Ende des Vertrages zwischen verleihendem Club und Spieler als wirtschaftliche Nutzungsdauer heranzuziehen (vgl. Weber, 2016, S. 250 f.). Verbandsrechtlich muss der Arbeitsvertrag des Spielers beim verleihenden Club über die Leihdauer hinaus gültig sein (vgl. § 5 Nr. 2 S. 5 LOS), wodurch der verliehene Spieler immer zum Club zurückkehrt.

Obwohl der ausleihende Club den Spieler einsetzen kann, daraus entstehende Lasten zu tragen hat, an Wert- und Leistungsänderungen partizipiert und Risiken, z.B. bei Invalidität oder Suspendierung trägt, kehrt der Spieler zu seinem vorherigen Arbeitgeber zurück. Spieler werden grundsätzlich am Anfang der Vertragslaufzeit verliehen, wodurch die Leihphase grdsl. kürzer als die anschließende Vertragslaufzeit ausfällt. Die Restlaufzeit ist folglich wesentlich bzw. maßgeblich. Ferner besitzt der verleihende Club auch während der Leihe

die Transferrechte am Spieler, wodurch der ausleihende Club den Spieler nicht selbstständig verwerten bzw. verkaufen und somit auch nicht zur Deckung seiner Schulden (sofern überhaupt angenommen) heranziehen kann. Folglich liegt kein abstrakt aktivierungsfähiger Vermögensgegenstand vor (vgl. Weber, 2016, S. 250-252).

Der ausleihende Club hat den Spielerwert folglich weiterhin in seiner Bilanz zu führen und planmäßig abzuschreiben. Die Leihgebühr ist erfolgswirksam als Transfertrag innerhalb der Umsatzerlöse auszuweisen und falls der Spieler über das Geschäftsjahr hinaus verliehen wird, anhand eines passiven Rechnungsabgrenzungspostens (PRAP) zu periodisieren. Im Gegenzug stellt die Leihgebühr Aufwand für den ausleihenden Club dar, welcher als Transferaufwand unter den sonstigen betrieblichen Aufwendungen zu verbuchen ist. Analog muss bei einer Leihe über das Geschäftsjahr hinaus ein ARAP gebildet werden. Enthält der Leihvertrag eine Verlängerungsoption, wird dies keinen Einfluss auf die bilanzielle Abbildung haben, da sich immer noch eine Restlaufzeit anschließen wird und die Transferrechte auch in dem Fall während der gesamten Zeit beim verleihenden Club verbleiben. Durch eine Kaufoption könnte der ausleihende Club auch in der sich der Leihdauer anschließenden wesentlichen Zeit vom Spielerwert profitieren und ihn verwerten, da er die exklusive Einsatzmöglichkeit erwerben kann. Jedoch ist es schwierig einzuschätzen, ob der ausleihende Club die Option ziehen wird, da dies von der Leistung des Spielers abhängen wird, sodass im Falle eines Leistungsabfalls und der daraus folgenden Nicht-Ziehung der verleihende Club die langfristigen Risiken trägt (vgl. ebd. S. 252).

Die Tatsache, dass der ausleihende Club bei einer Kaufoption jederzeit den Spieler verpflichten kann und folglich wirtschaftlicher Eigentümer wird, spricht zwar für einen bilanziellen Ansatz bei diesem, erfordert aber, dass die Op-

tionsziehung zu erwarten ist (vgl. Neumeister 2004, zitiert nach Weber, 2016, S. 252). Der Gebrauch von Optionsklauseln im Fußballgeschäft wird maßgeblich von der Leistung des Spielers abhängig sein, die nicht hervorsehbar ist, sodass grdsl. zum Vertragszeitpunkt nicht zuverlässig beurteilt werden kann, ob die Option gezogen wird (vgl. Jansen, 1992, S. 1788). Bei einer Kaufpflicht zum Ende der Leihdauer erhält der ausleihende Club die Transferrechte erst zum Zeitpunkt des Kaufs, sodass auch in dem Fall eine vorherige Aktivierung nicht gerechtfertigt scheint.

Die bilanzielle Behandlung von Spielerleihen nach den IFRS ist wesentlich komplizierter, da diese als Leasingverhältnisse eingestuft werden können. IFRS 16.4 beinhaltet ein Wahlrecht für Leasingverhältnisse, die andere immaterielle Vermögenswerte als in IFRS 16.3e genannt zum Gegenstand haben, wozu Spielerwerte gehören. Dieses Wahlrecht gilt jedoch nur für den Leasingnehmer (ausleihender Club), wodurch dieser aussuchen kann, ob die Spielerleihe nach IFRS 16 oder IAS 38 bilanziert wird. Der verleihende Club (Leasinggeber) hingegen muss nach IFRS 16 bilanzieren. Eine Aktivierung nach IAS 38 ist möglich, da das wirtschaftliche Eigentum kein Kriterium eines immateriellen Vermögenswertes nach IAS 38 ist. Die Beherrschung der Ressource während der Leihe ist zu bejahen, da die Einsatzmöglichkeit verbandsrechtlich abgesichert ist, sodass in der Zeit nur der ausleihende Club den Spieler einsetzen kann. Die abgesicherte Einsatzmöglichkeit begründet auch den zukünftigen ökonomischen Nutzen. Die Spielerlaubnis ist mit der entrichteten Leihgebühr zu bewerten und über die Leihdauer abzuschreiben (vgl. PwC 2018, S. 8). Identifizierbarkeit liegt vor, da die Einsatzmöglichkeit durch Vertrag (Leihvertrag) begründet wird. Die Ansatzkriterien sind ebenfalls erfüllt, da die Zahlung einer Leihgebühr ein Indiz für die Wahrscheinlichkeit des zukünftigen ökonomischen Nutzens darstellt und zu einer verlässlichen Bewertung der Anschaffungskosten führt (vgl. Kapitel 3.3).

Entscheidet sich der ausleihende Club für den Anwendungsbereich von IFRS 16, dann wird der Nutzungswert („right of use") des Spielers bilanziert und bei sofortiger Fälligkeit der Leasinggebühr, betragsgleich nach IAS 38 bewertet und planmäßig abgeschrieben. Für den verleihenden Club ist relevant, ob es sich bei dem Leihgeschäft um ein einen „Operating Lease" oder „Finance Lease" handelt. Ein „Finance Lease" ist anzunehmen, wenn die Beispiele in IFRS 16.63 oder IFRS 16.64 zutreffen. Diese ähneln dem wirtschaftlichen Eigentum nach Handelsrecht, sodass folgend der Begriff benutzt wird. Wenn das wirtschaftliche Eigentum nicht übergeht („Operating Lease"), behandelt der verleihende Club die Spielerlaubnis analog zum Handelsrecht. Folglich verbleibt der Spielerwert in der Bilanz und wird planmäßig abgeschrieben. Für die erhaltene Leihgebühr muss je nach Leihdauer ein PRAP gebildet werden und als Ertrag der jeweiligen Periode aufgelöst werden. Ein „Operating Lease" kann bei gewöhnlichen Leihschäften, bei denen der Spieler zum ausleihenden Club zurückkehrt, angenommen werden. Wird dennoch ein „Finance Lease" festgestellt, muss der verleihende Club die Leihe als Veräußerung bewerten und den

Spielerwert bis auf einen Restwert, der sich aus der Rückkehr des Spielers ergibt, ausbuchen. Die Differenz zwischen Leihgebühr und Ausbuchung wird entweder als Ertrag oder Aufwand in der GuV ausgewiesen (vgl. PwC 2018, S. 8 f.).

Enthält das Leasingverhältnis eine unkündbare Kaufpflicht am Ende der Leihe, so kann von einem Kauf zu Leihbeginn ausgegangen werden, sodass IAS 38 anzuwenden ist. Der Spielerwert wird in dem Fall mit dem Barwert der Leihgebühr und der am Ende fällig werdenden Kaufsumme bewertet. Der verleihende Club hat folglich den Spielerwert komplett auszubuchen und die Differenz zwischen Bar- und Buchwert als Aufwand oder Ertrag in der GuV auszuweisen. Existiert lediglich eine Kaufoption und entscheidet sich der ausleihende Club für den Anwendungsbereich von IFRS 16, ist in Abhängigkeit der Wahrscheinlichkeit der Optionsziehung, die Kaufsumme im Barwert der Leasingverbindlichkeit zu berücksichtigen, wodurch das „right of use" gleichermaßen steigt. In dem Fall muss dies bei der Nutzungsdauer bzw. den planmäßigen Abschreibungen berücksichtigt werden (vgl. PwC 2018, S. 11 f.).

Entscheidet sich der ausleihende Club für die Anwendung von IAS 38, wird angenommen, dass ein Teil der Leihgebühr auf den Optionserwerb entfällt. Folglich ist die Leihgebühr entsprechend auf den Spielerwert und die Option aufzuteilen. Die Option stellt einen immaterieller Vermögenswert nach IAS 38 dar, darf aber nach IAS 38.97 nicht planmäßig abgeschrieben werden, da ihr Nutzen erst bei Ziehung und nicht über Zeit konsumiert wird. Die Option wird jedoch einem jährlichen „Impairment-Test" nach IAS 36 unterzogen. Wird diese schließlich gezogen, erhöht sich der Buchwert des Spielerwertes in Höhe des Kaufpreises. Falls nicht, ist die Option abzuschreiben (vgl. ebd. S. 12). Durch den „Impairment-Test" könnte die Option auch bereits vorher abgeschrieben werden, wenn es hinreichend sicher ist, dass diese nicht gezogen wird. In dem Zusammenhang ist nochmal zu erwähnen, dass eine verlässliche Prognose bezüglich der Ziehung einer Optionsklausel zum Vertragszeitpunkt bei Fußballspielern grundsätzlich nicht möglich sein wird (vgl. Jansen, 1992, S. 1788).

### 4.1.3. Besonderheiten des Spielertausches

Neben dem entgeltlichen Erwerb und der Spielerleihe, kann auch ein Spielertauschgeschäft durchgeführt werden. In der Regel erfolgt dies mit einer zusätzlichen Baraufgabe, da die getauschten Spieler unterschiedliche „Marktwerte" haben. Dadurch wird der höhere Nutzenverlust des einen Clubs kompensiert. Bei solchen Geschäften eröffnet sich Raum für Bilanzpolitik, da sich die Clubs „nur" auf den Mehrwert des einen Spielers (Zahlbetrag) einigen müssen. Beträgt dieser z.B. 5 Millionen Euro, können die Werte der Spieler beliebig hoch bestimmt werden. So können die Spielerwerte z.B. auf 10 und 15 Millionen oder aber auch auf 40 und 45 Millionen festgelegt werden. Aus kaufmännischer Sicht bestehen Anreize die Spieler überzubewerten, da somit höhere Erträge und Umsätze ausgewiesen werden können (vgl. Hoffmann & Lüdenbach, 2004, S. 337). Der italienische Club Inter Mailand konnte sich dadurch für die Spielzeiten 2004/2005 und

2005/2006 die Lizenz sichern, während Stadtrivale AC Mailand Bilanzverluste ausglich (vgl. Tagesspiegel, 2007).

Ein Tausch liegt nach Handelsrecht vor, „wenn die vom Bilanzierenden für den Erwerb eines VG erbrachte Leistung nicht in einer Barzahlung, sondern in einer anderweitigen Leistung (zB in der Hingabe eines VG oder der Erbringung einer Dienstleistung) besteht." (Schubert & Gadek, 2020, § 255 HGB Rn. 39). Leistet eine der Parteien zusätzlich zur unbaren eine bare Leiste, liegt ein Tausch mit Baraufgabe vor. Einerseits existiert ein Veräußerungs- und andererseits ein Anschaffungsgeschäft (Doppelnatur des Tausches, vgl. ebd., Rn. 39 f.). Im Handelsrecht gibt es drei Methoden für die Bewertung von Tauschgeschäften: Gewinnrealisierung, Buchwertfortführung und ergebnisneutrale Behandlung (vgl. ADS, § 255 HGB Tz. 89). Bei der Gewinnrealisierung entsprechen die Anschaffungskosten des erhaltenen Spielers dem Zeitwert des eingetauschten, dürfen aber den Zeitwert des erhaltenen nicht überschreiten, da der realisierte Veräußerungserfolg aus diesem ermittelt wird. Dem Veräußerungsgeschäft liegt das Realisationsprinzip zugrunde. Erhält der Club zusätzlich eine Baraufgabe, reduziert diese die Anschaffungskosten, während eine geleistete Baraufgabe diese erhöht (vgl. Schubert & Gadek, 2020, § 255 Rn. 40).

Bei der erfolgsneutralen Variante wird der erhaltene Spieler zum Buchwert des eingetauschten bilanziert, dies setzt aber voraus, dass der Buchwert des eingetauschten Spielers den Zeitwert des erhaltenen nicht übersteigt. Die erfolgsneutrale Variante kann auch bei Tauschgeschäften mit Baraufgabe angewendet werden. Hierbei gilt zu beachten, dass stille Reserven aufgedeckt werden müssen, wenn die erhaltene Baraufgabe den Buchwert des eingetauschten Spielers übersteigt, da sich ansonsten ein negativer Buchwert ergibt. Bei der erfolgsneutralen Variante erfolgt die Zugangsbewertung zum Buchwert des eingetauschten (analog zur Buchwertfortführung), berücksichtigt aber noch die Ertragssteuerbelastung aus dem Veräußerungsgeschäft, wodurch die Steuerbelastung und damit das Periodenergebnis neutralisiert wird. Für die Anwendung muss die Belastung aufwandswirksam sein (vgl. ebd.).

Nach den IFRS werden Tauschgeschäfte vorrangig zum beizulegenden Zeitwert bewertet. Eine Bewertung des erhaltenen Spielers zum Buchwert des eingetauschten findet nur statt, wenn es dem Tauschgeschäft an wirtschaftlicher Substanz fehlt und der beizulegende Zeitwert des erhaltenen und des eingetauschten Spielers nicht verlässlich bewertet werden kann (vgl. IAS 38.45). Wirtschaftliche Substanz ist zu bejahen, wenn sich die Zusammensetzung des Cashflows des erhaltenen Spielers hinsichtlich „Risiko, Timing und Betrag" von dem des eingetauschten unterscheidet (IAS 38.46a). Ferner liegt wirtschaftliche Substanz vor, wenn „der unternehmensspezifische Wert des Teils der Geschäftstätigkeiten des Unternehmens, der von der Transaktion betroffen ist, sich aufgrund des Tauschgeschäfts ändert" (IAS 38.46b). Die Differenzen müssen im Wesentlichen durch die beizulegenden Zeitwerte der getauschten Spieler verursacht werden (vgl. IAS 38.46c).

IAS 38.21b setzt die verlässliche Bewertung der Anschaf-

fungskosten von immateriellen Vermögenswerten für den Ansatz voraus. Da in diesem Fall die Anschaffungskosten vorrangig dem beizulegenden Zeitwert entsprechen, muss dieser verlässlich geschätzt werden. Dies ist der Fall, wenn „die Schwankungsbandbreite der sachgerechten Bemessungen des beizulegenden Zeitwerts für diesen Vermögenswert nicht signifikant ist" (IAS 38.47), also in anderen Worten die Schwankungsbandbreite eine verlässliche Bewertung zulässt. Existieren verschiedene Schätzungen innerhalb dieser Bandbreite, müssen die Eintrittswahrscheinlichkeiten der verschiedenen Schätzungen vernünftig geschätzt und für die Bemessung herangezogen werden können. Können die beizulegenden Zeitwerte beider Spieler verlässlich bestimmt werden, ermitteln sich die Anschaffungskosten aus dem beizulegenden Zeitwert des eingetauschten Spielers, es sei denn, der beizulegende Zeitwert des erhaltenen Spielers ist eindeutiger zu ermitteln (vgl. ebd.). Die Regelungen gelten auch bei Tauschgeschäften, bei denen eine Vertragspartei zusätzlich eine Baraufgabe leistet (vgl. IAS 38.45), sodass die Anschaffungskosten eines durch Tausch erworbenen Vermögenswertes geleistete bzw. erhaltene Zuzahlungen berücksichtigen (vgl. Böcking & Wiederhold, 2014, IAS 38 Rn. 106, 109).

Beim Tausch von Fußballspielern liegt grdsl. keine wirtschaftliche Substanz vor, da Spieler keine einzeln zurechenbaren Zahlungsströme verursachen. Fußball ist ein Mannschaftsport, wodurch Einnahmen und Ausgaben durch die ganze Mannschaft verursacht werden. Eine Veränderung des Cashflows des Spielers oder des unternehmensspezifischen Wertes des Teils der Geschäftstätigkeiten (Lizenzmannschaft) könnte theoretisch angenommen werden, wenn z.B. ein Werbe-Sponsor das Budget erhöht, wenn ein gewisser Spieler unter Vertrag genommen wird. Dadurch kann aber lediglich eine Zahlungsänderung bestimmt werden, nicht aber der absolute Cashflow der Mannschaft oder des Spielers (vgl. Lüdenbach & Hoffmann, 2004, S. 1146). Ferner ist die zuverlässige Ermittlung des beizulegenden Zeitwertes eines Fußballspielers mit Problemen behaftet, wie sich im folgenden Kapitel zeigen wird. Demnach hat die Bewertung eines durch Tausch erhaltenen Fußballspielers nach beiden Standards i.d.R. zum Buchwert des eingetauschten zu erfolgen. Sind die beizulegenden Zeitwerte dennoch verlässlich ermittelbar, scheitert die Bewertung zum beizulegenden Zeitwert nach IFRS an der wirtschaftlichen Substanz.

## 4.2. Folgebewertung nach HGB und IFRS

### 4.2.1. Planmäßige und außerplanmäßige Abschreibung

Vermögensgegenstände werden nach § 252 Abs. 1 Nr. 3 HGB zum Abschlussstichtag einzeln bewertet und dürfen nach § 253 Abs. 1 HGB höchstens zu Anschaffungs- oder Herstellungskosten, vermindert um kumulierte planmäßige und außerplanmäßige Abschreibungen angesetzt werden. Diese werden für Spielerwerte aufgrund der Zugehörigkeit zum Anlagevermögen in Absatz 3 geregelt. Durch erfolgswirksame planmäßige Abschreibungen werden die Kosten eines zeitlich begrenzt nutzbaren Vermögensgegenstandes

auf die voraussichtliche Nutzungsdauer verteilt. Zusätzlich werden Vermögensgegenstände des Anlagevermögens außerplanmäßig erfolgswirksam abgeschrieben, wenn der Wert am Abschlussstichtag voraussichtlich dauernd gemindert ist (gemildertes Niederstwertprinzip). Fällt der Grund für die außerplanmäßige Abschreibung weg, wird der niedrigere Wertansatz erfolgswirksam korrigiert (vgl. § 253 Abs. 5 HGB).

Nach IAS 38.72 darf der Bilanzierende aussuchen, ob er das Anschaffungs- oder Neubewertungsmodell für die Folgebewertung von immateriellen Vermögenswerten anwendet. Das Anschaffungskostenmodell nach IAS 38.74 entspricht hierbei der Folgebewertung nach Handelsrecht. Beim Neubewertungsmodell wird der immaterielle Vermögenswertmit seinem Neubewertungsbetrag bewertet (beizulegender Zeitwert zum Zeitpunkt der Neubewertung) und in Folge planmäßig und gegebenenfalls außerplanmäßig abgeschrieben. Eine Neubewertung hat in der Regelmäßigkeit zu erfolgen, die verhindert, dass der beizulegende Zeitwert wesentlich vom Buchwert abweicht (vgl. IAS 38.75). „Der beizulegende Zeitwert ist der Preis, der in einem geordneten Geschäftsvorfall zwischen Marktteilnehmern am Bemessungsstichtag für den Verkauf eines Vermögenswertes eingenommen bzw. für die Übertragung einer Schuld gezahlt würde." (IAS 38.8). Die Ermittlung erfolgt nach IFRS 13 (vgl. ebd.). IFRS 13 differenziert zwischen unterschiedlichen Inputfaktoren (Stufen 1 bis 3), die in den Bewertungstechniken zur Ermittlung des beizulegenden Zeitwertes verwendet werden. Die Inputfaktoren unterscheiden sich hinsichtlich ihrer Beobachtbarkeit, sodass in den Bewertungstechniken vorrangig Inputfaktoren einer niedrigeren Stufe zu verwenden sind. Inputfaktor der Stufe 1 ist ein Preis auf einem aktiven Markt für den identischen Vermögenswert. Der Preis auf einem aktiven Markt für einen vergleichbaren Vermögenswert bildet einen Inputfaktor der Stufe 2, während Inputfaktoren der Stufe 3 nicht beobachtbar sind. Diese werden durch das Unternehmen entwickelt (vgl. IFRS 13.61-90).

Die Folgebewertung zum beizulegenden Zeitwert in IAS 38 ist an einen Preis auf einem aktiven Markt für den identischen Vermögenswert geknüpft (Inputfaktor der Stufe 1, vgl. IAS 38.75). Dieser wird als „Ein Markt, auf dem Geschäftsvorfälle mit dem Vermögenswert oder der Schuld mit ausreichender Häufigkeit und Volumen auftreten, so dass fortwährend Preisinformationen zur Verfügung stehen." definiert (Anhang A IFRS 13). Ein aktiver Markt für Profi-Fußballspieler existiert nicht, da Spieler unterschiedliche individuelle Fähigkeiten besitzen und ihre Werte von der Einsatzmöglichkeit im Team abhängen. Ferner sind Wechsel nur in den dafür vorgesehenen Zeiträumen der DFL möglich (vgl. Baetge, Klönne & Weber, 2013, S. 313) und Transferpreise sind der Öffentlichkeit nicht immer zugänglich (vgl. Homberg et al., 2004, S. 257). Folglich kann für die Folgebewertung nach IFRS nur das Anschaffungskostenmodell verwendet werden.

Nach beiden Standards erfolgt die planmäßige Abschreibung linear über die Vertragslaufzeit. Enthält der Vertrag eine Option zur Verlängerung, muss beurteilt werden, ob diese gezogen wird. Während IAS 38.94 zusätzlich fordert, dass keine erheblichen Kosten mit der Optionsziehung verbunden sind, kann diese nach Handelsrecht aufgrund des Vorsichtsprinzips außer Acht gelassen werden. Es ist indes schwierig bei Vertragsbeginn abzuschätzen, ob von einer Verlängerungsoption Gebrauch gemacht wird, da dies von der Leistung des Fußballspielers abhängt, die nicht vorhersehbar ist (vgl. Hoffmann, 2006, S. 131; Jansen, 1992, S. 1788; Homberg et al., 2004, S. 256). Ist jedoch nach den IFRS hinreichend sicher, dass die Option gezogen wird, ist die Nutzungsdauer anzupassen (vgl. Homberg et al., 2004, S. 256).

Komplizierter ist die Abbildung von außerplanmäßigen Abschreibungen. Nach herrschender Meinung (h.M.) des handelsrechtlichen Schrifttums liegt eine voraussichtlich dauernde Wertminderung vor, wenn der beizulegende Zeitwert für einen erheblichen Teil der Restnutzungsdauer unter den fortgeführten Anschaffungskosten liegen wird. Dies wird bei der Hälfte der Restnutzungsdauer angenommen, wobei der Zeitraum auch kürzer ausfallen kann, wenn der Unterschied größer wird (vgl. Schubert & Andrejewski, 2020, § 253 HGB Rn. 317; Tiedchen, 2013, § 253 HGB Rn. 123). „Der beizulegende Zeitwert entspricht dem Marktpreis. Soweit kein aktiver Markt besteht, anhand dessen sich der Marktpreis ermitteln lässt, ist der beizulegende Zeitwert mit Hilfe allgemein anerkannter Bewertungsmethoden zu bestimmen." (§ 255 Abs. 4 S. 1, 2 HGB). Die Anschaffungs- oder Herstellungskosten werden nur dann fortgeführt, wenn sich der beizulegende Zeitwert nicht ermitteln lässt. Lässt sich dieser jedoch ermitteln, gilt dieser als Anschaffungs- oder Herstellungskosten (vgl. § 255 Abs. 4 S. 3, 4 HGB).

Zunächst ist somit der Börsen- oder Marktpreis des Vermögensgegenstandes heranzuziehen. Ist dieser nicht beobachtbar, ist aufgrund der Fortführungsannahme in § 252 Abs. 1 Nr. 2 HGB zunächst der Wiederbeschaffungswert (Käufersicht) und bei Fehlen eines Beschaffungsmarktes, der Reproduktionswert (Herstellung) maßgeblich. Der Nettoveräußerungswert (Verkäufersicht) sollte aufgrund der Annahme des langfristigen Nutzens von Anlagevermögen nur dann herangezogen werden, wenn der Vermögensgegenstand zum Verkauf bestimmt ist, da z.B. das Ende der Nutzungsdauer erreicht wird. Lässt sich keiner dieser Größen ermitteln, was insbesondere bei immateriellen Vermögensgegenständen der Fall ist, ist der Ertragswert heranzuziehen, der sich aus dem Barwert der zukünftigen Einzahlungsüberschüsse zusammensetzt (vgl. Schubert & Andrejewski, 2020, § 253 HGB Rn. 308-310; Tiedchen, 2013, § 253 HGB Rn. 121). Ob die genannten Größen für Spielerwerte ermittelbar sind, wird aufgrund von Parallelen zu den IFRS-Größen an späterer Stelle beurteilt.

Außerplanmäßige Abschreibungen nach den IFRS werden im IAS 36 geregelt. So muss bei begrenzt nutzbaren Vermögenswerten am Abschlussstichtag eingeschätzt werden, ob Anhaltspunkte für eine Wertminderung vorliegen (vgl. IAS 36.9). Ein außerplanmäßiger Abschreibungsbedarf ergibt sich im Gegensatz zum HGB auch bei vorübergehenden Wertminderungen (vgl. Littkemann, Schulte & Schaarschmidt, 2005, S. 662). Stellt das Unternehmen Indizien

einer Wertminderung fest, wird der erzielbare Betrag des Vermögenswertes ermittelt (vgl. IAS 36.8). Ist dieser niedriger als der Buchwert, erfolgt eine erfolgswirksame außerplanmäßige Abschreibung auf den erzielbaren Betrag (vgl. IAS 36.59 f.). Dieser ermittelt sich aus dem höheren zwischen dem beizulegenden Zeitwert abzüglich Veräußerungskosten und dem Nutzungswert (vgl. IAS 36.18). Der Nutzungswert entspricht dem Barwert der zukünftigen Cashflows, die durch den Vermögenswert verursacht werden (vgl. IAS 36.30 f.). Ein wesentlicher Unterschied zum beizulegenden Zeitwert nach IAS 38 ist, dass kein aktiver Markt für die Anwendung vorausgesetzt wird (vgl. IAS 36.20). Auch nach den IFRS sind außerplanmäßige Abschreibungen erfolgswirksam umzukehren, wenn die Gründe wegfallen. Es darf analog zum Handelsrecht höchstens bis zu dem Betrag zugeschrieben werden, der sich bei planmäßiger Abschreibung ergeben hätte (vgl. IAS 36.117, 36.119).

Aufgrund der Notwendigkeit einer voraussichtlich dauerhaften Wertminderung nach Handelsrecht, soll im Folgenden untersucht werden, wann dies bei Fußballspielern angenommen werden kann. Nach den IFRS könnte gegebenenfalls schon früher außerplanmäßig abgeschrieben werden. Littkemann et al. (2005, S. 663-665) identifizieren Verletzungen und Suspendierungen als Indikatoren einer voraussichtlich dauerhaften Wertminderung. Bei ersterem wird zwischen einer langwierigen (Verletzung länger als acht Wochen) und einer nicht-langwierigen Verletzung unterschieden. Eine langwierige Verletzung führt i.d.R. dazu, dass der Verein einen Ersatzspieler verpflichtet, wodurch, wenn dieser eine gute Leistung zeigt, ein Stammplatz bei Rückkehr nicht garantiert ist. Ferner dauert die Genesung und Rückkehr zur alten Form länger, da Spielpraxis fehlt. Fußballspieler unterliegen einem erheblichen Leistungsdruck, sodass eine zu frühe Rückkehr und eine weitere Verletzung nicht unüblich sind.

Bei einer Suspendierung trainiert der Spieler mit den Amateuren und wird vom Profi-Trainingsbetrieb ausgeschlossen. In der Regel wird ebenfalls ein Ersatztransfer getätigt, da nicht mehr mit dem Spieler geplant wird. Eine Rückkehr zur Mannschaft ist äußerst selten und unwahrscheinlich. Eine Suspendierung kann mit öffentlicher Kritik durch den Club einhergehen, was zum endgültigen Abbruch des „Bandes" führt. Neben schlechten sportlichen Leistungen kann der Grund auch in Machkämpfen liegen. Die Verkaufsabsicht wird öffentlich kommuniziert, was interessierten Clubs nicht entgeht. Diese nutzen die Situation und verpflichten suspendierte Spieler i.d.R. für Spottpreise oder gar ablösefrei (vgl. ebd., S. 664 f.). Daher kann bei langwierigen Verletzungen und Suspendierungen angenommen werden, dass der beizulegende Zeitwert des Spielers für wesentliche Teile der Restlaufzeit des Vertrages gemindert ist. Der Club hat in den Fällen keinen Nutzen mehr im Einsatz des Spielers im Profi-Betrieb.

Obwohl nach den IFRS gegebenenfalls schon früher außerplanmäßig abgeschrieben wird, erschwert die Schnelllebigkeit des Profi-Fußballs Anzeichen einer Wertminderung festzustellen. Einsatzchancen von Spielern können sich wöchentlich ändern und hängen auch von Trainerwechseln und Verletzungen ab (vgl. Schröder & Specht, 2020, S. 962). Nur weil ein Spieler im letzten Spiel nicht eingesetzt wurde, heißt es nicht, dass seine fußballerischen Fähigkeiten bzw. sein Nutzen für den Club gemindert sind. Daher erscheint es plausibel, dass auch nach den IFRS ein Wertminderungsaufwand erst bei Vorliegen der oben genannten Indizien gerechtfertigt sein könnte. Nach beiden Standards muss der Spielerwert zudem im Falle einer Sportinvalidität komplett abgeschrieben werden, da in dem Fall die Spielerlaubnis erlischt (vgl. § 13 Nr. 4, 7 LOS).

Liegen Indizien einer (voraussichtlich dauerhaften) Wertminderung am Bilanzstichtag vor, ist folglich der beizulegende Zeitwert nach HGB und der erzielbare Betrag nach IFRS zu ermitteln. Aufgrund des Fehlens eines Marktes für den identischen Fußballer scheitert die Heranziehung des Marktwertes als beizulegender Zeitwert nach Handelsrecht. Dies gilt nicht automatisch für die IFRS, da der beizulegende Zeitwert in IAS 36 nicht an einen aktiven Markt geknüpft ist. Darüber hinaus wird im HGB der Ertragswert und in den IFRS der Nutzungswert genannt. Diese erfordern einzeln zurechenbare Erträge bzw. Cashflows, die, wie bereits thematisiert, für Fußballspieler nicht vorliegen. Ferner wird im handelsrechtlichen Schrifttum der Wiederbeschaffungs-, Reproduktions- und Veräußerungswert genannt. Während der Wiederbeschaffungswert analog aufgrund des Fehlens eines Marktes nicht ermittelt werden kann, setzt der Reproduktionswert die Reproduzierbarkeit des identischen Fußballers voraus. Fußballer haben unterschiedliche individuelle Fähigkeiten, sodass die Reproduktion eines Spielers mit den gleichen Fähigkeiten ausgeschlossen ist (vgl. Galli, 2003, S. 815).

Hingegen darf der Veräußerungswert erst dann herangezogen werden, wenn der Vermögensgegenstand zum Verkauf bestimmt ist. Fußballer werden grdsl. zum Einsatz verpflichtet, aber bei einer Wertminderung in Folge einer Suspendierung und der damit verbundenen Verkaufsabsicht, kann die Heranziehung der Größe gerechtfertigt sein. Folglich ist zu ermitteln, wie der Verkaufswert (HGB) und der beizulegende Zeitwert (IFRS) ohne aktiven Markt ermittelt werden können. Die Antwort könnte im Scoring-Modell liegen, dass in den folgenden Absätzen vorgestellt wird. Zuvor wird untersucht, ob durch das Bilden einer „cash generating unit" (CGU) das Problem zumindest nach den IFRS auf „natürliche" Weise gelöst werden kann.

Grundsätzlich geht IAS 36 ebenfalls vom Einzelbewertungsgrundsatz aus, beinhaltet aber eine Ausnahme, wenn der erzielbare Betrag für einen einzelnen Vermögenswert nicht schätzbar ist. In dem Fall wird der erzielbare Betrag der zahlungsmittelgenerierenden Einheit herangezogen, zu welcher der Vermögenswert gehört (vgl. IAS 36.66). „Eine zahlungsmittelgenerierende Einheit ist die kleinste identifizierbare Gruppe von Vermögenswerten, die Mittelzuflüsse erzeugen, die weitestgehend unabhängig von den Mittelzuflüssen anderer Vermögenswerte oder anderer Gruppen von Vermögenswerten sind." (IAS 36.6). Theoretisch denkbar ist somit die Zusammenfassung aller Lizenzspieler in eine CGU (vgl. Homberg et al., 2004, S. 260). Analog zur Einzelbewer-

tung ermittelt sich der erzielbare Betrag einer CGU aus dem höheren aus dem beizulegenden Zeitwert abzüglich Veräußerungskosten und dem Nutzungswert (vgl. IAS 36.18).

IAS 36.67 enthält jedoch zwei Voraussetzungen, damit der Einzelbewertungsgrundsatz nicht gilt. So muss der Nutzungswert des Vermögenswertes stark von seinem beizulegenden Zeitwert abzüglich Verkaufskosten abweichen und der Vermögenswert darf keine, von anderen Vermögenswerten unabhängigen, Mittelzuflüsse generieren. Während letzteres unproblematisch zu bejahen ist, da gerade die Mannschaft als Ganzes Zahlungsströme verursacht, erscheint auch das erste Kriterium als erfüllt. Der Nutzungswert eines Spielers würde nur seinem beizulegenden Zeitwert abzüglich Verkaufskosten entsprechen, wenn der Nutzen im Verkauf liegen würde (vgl. Schröder & Specht, 2020, S. 963), was grundsätzlich nicht anzunehmen ist, da Spieler hauptsächlich zum Einsatz erworben werden. Ein Verkauf ergibt sich i.d.R. nur, wenn der Spieler nicht die erhoffte Leistung zeigt, wechseln möchte oder ein außerordentliches Angebot eingeht.

Als der Lizenzspielermannschaft zurechenbare Zahlungsströme kann man theoretisch alle Zahlungen eines Profi-Fußballunternehmens erachten (vgl. Homberg et al., 2004, S. 260). Während Sieges- und Teilnahmeprämien sicherlich zu den direkt zurechenbaren Zahlungsströmen gehören, zählen auch Erlöse aus Ticket-, Merchandising- und Trikots-Verkäufen dazu. Erträge aus Medienrechten und Werbeeinnahmen werden ebenfalls durch die Mannschaft generiert und hängen vom Erfolg dieser ab. Obwohl letztere aufgrund von Verträgen verlässlich schätzbar sind, erweist sich die verlässliche Ermittlung der anderen Zahlungen als problematisch, da diese variabel und abhängig von externen Faktoren sind. Aufgrund derzeitiger coronabedingter Regulierung der Zuschauerplätze erzielen Clubs niedrigere Einnahmen durch Ticketverkäufe. Es stellt sich die Frage, inwiefern dies einen Wertminderungsaufwand begründet, da damit keine Minderung der fußballerischen Fähigkeiten der Mannschaft einhergeht. Problematisch ist, dass im Nutzungswert auch Zahlungsströme aus Verkäufen zu berücksichtigen sind (vgl. IAS 36.31a), Spieler aber primär zum Einsatz verpflichtet werden. Dennoch ist die Anwendbarkeit nicht ausgeschlossen, wenn Grundlagen für die Schätzung der zukünftigen Cashflows vorliegen. So kann dies insbesondere bei Finanzplänen mit vertretbaren Annahmen angenommen werden (vgl. IAS 36.33-38).

Für die Ermittlung des beizulegenden Zeitwertes wendet ein Unternehmen die sachgerechteste bzw. die Bewertungstechnik an, für die ausreichend Informationen zur Verfügung stehen an und berücksichtigt hierbei bestenfalls nur beobachtbare Inputfaktoren (vgl. IFRS 13.61). Hierfür werden drei Ansätze genannt: marktbasiert, kostenbasiert und einkommensbasiert (vgl. IFRS 13.B5-B11). Diese Ansätze werden auch im Rahmen von Unternehmens- und Asset-Bewertungen angewendet (vgl. Galli, 2003, S. 814). Demnach könnte ein Wertminderungsaufwand bestehen, wenn der Unternehmenswert unter der Summe der Buchwerte der Lizenzspieler liegt. Ein so festgestellter Wertminderungsaufwand wird anteilig anhand der Buchwerte der Vermögens-

werte in der CGU aufgeteilt (vgl. IAS 36.104). Dies impliziert, dass Spieler mit höheren Buchwerten stärker in ihren fußballerischen Fähigkeiten bzw. Nutzen für die Mannschaft abgeschrieben werden, was keinen Sinn macht. Zudem ist fraglich, ob der Unternehmenswert jemals unter dem Buchwert der CGU liegen wird, da Buchwerte von Fußballspielern hohe stille Reserven beinhalten, ablösefreie Spieler sowie Jugendspieler gar nicht aktiviert werden und Spieler, die nach oder kurz vor Auslauf ihrer Verträge verlängert haben, einen Buchwert von null oder gegen null haben (vgl. Weber, 2020, S. 323).

Somit scheint das „Ausweichen" auf die CGU nicht sinnvoll. Im Folgenden soll daher untersucht werden, ob mit den genannten Konzepten zur Unternehmens- und Asset-Bewertung ein objektivierter individueller Spielerwert ermittelt werden kann (vgl. Galli, 2003, S. 814). Es ist indes unstrittig in der Unternehmensbewertungs-Theorie, dass der ermittelte Wert vom Bewertungsanlass abhängt, aber selbst für einen Bewertungszweck nicht immer der gleiche (objektive) Wert ermittelt wird. So kann zwischen profifußballunspezifischen und -spezifischen Bewertungsanlässen unterschieden werden. Zu den ersteren zählen Anlässe, die nicht auf das Fußballgeschäft beschränkt sind, wie z.B. Bewertungen im Rahmen von Fremdkapital-Vergaben durch Banken, welche Fußballspieler als hinterlegte Sicherheiten bewerten. Dazu zählen auch rechnungslegungsbezogene Anlässe wie der Impairment-Test nach den IFRS oder außerplanmäßige Abschreibungen nach Handelsrecht, bei denen ein objektiver Spielerwert (Marktwert) zu ermitteln ist (vgl. Baetge et al., 2013, S. 310 f.).

Zu den fußballspezifischen Anlässen zählt insbesondere das Financial Fair Play-Konzept der UEFA, das für die Teilnahme an den europäischen Wettbewerben gilt. Das Konzept besagt, dass die Gesamterträge eines Clubs höher als die Gesamtaufwendungen sein müssen. Die Transaktionen sind zu Marktwerten zu bewerten, sodass bei Transfergeschäften auch die Marktwerte der Spieler zu ermitteln sind. Aufgrund fehlender absolut objektiver Bewertungsmethoden ist dies nicht möglich, sodass Marktwerte von Spielern auch im Lizenzierungsverfahren der DFL nicht berücksichtigt werden, obwohl Fußballspieler das zentrale Vermögen des Fußballclubs bilden (vgl. ebd., S. 311 f.).

Die genannten Bewertungsanlässe unterscheiden sich hinsichtlich ihres Objektivierungsgrades. Bewertungen mit zwei Vertragspartnern sind intersubjektiv nachprüfbar. Die einzelnen Vertragspartner haben zwar subjektive Prämissen, legen diese aber für den Abschluss des Vertrages offen und passen diese an. Der ermittelte Spielerwert beruht somit auf übereinstimmenden Prämissen und ist für die Vertragspartner objektiv bzw. intersubjektiv nachprüfbar. Solche Vorgänge sind von Transparenz gekennzeichnet, was bei rechnungslegungsbezogenen Anlässen sowie im Rahmen des Financial Fair Play-Konzepts nicht zutrifft, da die Spielerbewertung einseitig erfolgt und Ermessensspielräume beinhaltet. Daher ist es insbesondere für verbands- und rechnungslegungsrechtliche Zwecke erforderlich, ein objektiviertes Verfahren für die Spielerbewertung zu ermitteln. Obwohl der Wert vom

Anlass abhängt, ist die Zielsetzung von verbandsrechtlichen und rechnungslegungsbezogenen Zwecken weitestgehend identisch (vgl. ebd., S. 312).

Beim einkommensbasierten Ansatz ermittelt sich der Spielerwert aus dem Ertragswert- bzw. Discounted-Cashflow-Verfahren, die auf dem Kapitalwertkalkül basieren. Voraussetzung ist, dass die zukünftigen zurechenbaren Zahlungsströme bekannt sind. Die Verfahren sind folglich zukunftsorientiert und berücksichtigen durch entsprechende Abzinsungssätze Risiken. Die Anwendbarkeit scheitert jedoch daran, dass Fußballer keine einzeln zurechenbaren Zahlungsströme verursachen. Beim kostenorientierten Ansatz entspricht der Wert des Spielers den Kosten, die das Unternehmen für die Wiederbeschaffung bzw. Reproduktion (Herstellung) leisten würde. Aufgrund einzigartiger und individueller fußballerischer Fähigkeiten existiert kein nutzenäquivalenter oder leistungsgleicher Spieler und kann auch nicht hergestellt werden (vgl. Galli, 2003, S. 815). Es erscheint zwar aus Objektivierungsgründen plausibel, dass diese Methode tatsächlich anfallende Kosten berücksichtigt, jedoch sind diese für den zukunftsbezogenen Wert eines Profi-Fußballspielers nicht aussagefähig. Ferner können Spieler seit dem Bosman-Urteil ablösefrei verpflichtet werden, sodass die Kosten für den Nachkauf oder Herstellung nicht eindeutig zu ermitteln sind (vgl. Baetge et al., 2013, S. 313).

Schließlich ist noch die Anwendbarkeit von marktpreisorientierten Verfahren zu prüfen. Bei diesen wird der Wert des Spielers grundsätzlich durch einen aktiven Markt ermittelt, welcher für Fußballspieler nicht vorliegt. Daher wird versucht, den gesuchten Preis eines Spielers durch den beobachtbaren Preis eines Vergleichsspielers herzuleiten. Dafür ist erforderlich, dass sich die Spieler bezüglich ihrer wertrelevanten Eigenschaften weitestgehend gleichen (Analogiemethode). Als Varianten der Analogiemethode kommen das Scoring-Modell nach Fischer, Rödl und Schmid (2006) und das Multiplikatoren-Verfahren nach Galli (2003) in Betracht (vgl. ebd., S. 313, Fn. 56, 57). Folgend wird das Scoring-Modell beschrieben, da sich angesichts des Ziels einer objektiven Spielerwertermittlung das Multiplikatoren-Verfahren nicht eignet. In der Literatur herrscht keine Einigkeit über die Anzahl der Cluster, die in dem Modell gebildet werden. Ferner werden individuelle Zu- und Abschläge berücksichtigt, welche subjektiv und intransparent sind. Es existieren somit Ermessensspielräume, wodurch der ermittelte Wert nicht absolut objektiv ist. Aus dem gleichen Grund eignet sich die populäre Seite „Transfermarkt" nicht, obwohl insbesondere Medien und einige Fußballclubs in ihren Jahresabschlüssen auf diese verweisen. Im Ermittlungsverfahren fließen subjektive Ab- oder Zuschläge ein, die nicht transparent sind. Die „Marktwerte" auf Transfermarkt sind somit nicht intersubjektiv nachprüfbar (vgl. ebd., S. 314, 318 f.).

Im Folgenden wird das Scoring-Modell nach Baetge et al. (2013, S. 314-318) dargestellt, welches das Modell von Fischer et al. (2006, S. 313-320) erweitert bzw. konkretisiert. Voraussetzung für die Anwendbarkeit ist, dass historische Transferpreise und Ausprägungen der spielerspezi-

fischen wertrelevanten Kriterien bekannt sind. Dies kann durch das Mitwirken der DFL erreicht werden, welche lizenzierungstechnisch Interesse an einem objektiven Spielerwert haben sollte. Die wertrelevanten Spieler-Kriterien sind insb. die Spielstärke (vgl. Eschweiler & Vieth, 2004, S. 688), Position, Anzahl Länderspieleinsätze, Einsatzzeit in der Liga (in Minuten), das Alter, die Restvertragslaufzeit und das Vermarktungspotenzial. Die Ablösehöhe wird zudem durch subjektive clubspezifische Determinanten wie Verhandlungsmacht und Knappheitssituationen beeinflusst. Aufgrund fehlender Möglichkeiten zur Herausrechnung wird angenommen, dass diese bei einer Vielzahl von Transfergeschäften neutralisiert werden. Schließlich beeinflussen noch profifußball-spezifische Faktoren (Erträge aus der medialen Verwertung) und clubspezifische Faktoren (Werbeeinnahmen) die Ablösehöhe (vgl. Eschweiler & Vieth, 2004, S. 675 f.).

Fischer et al. (2006, S. 319 f.) als auch Baetge et al. (2013, S. 315 f.) konnten dies statistisch bestätigen. Für die Bereinigung ist erforderlich, dass die gesamten Fernseh- und Sponsoreneinnahmen der jeweiligen Spielzeiten vorliegen. Aus den Veränderungen werden nun Inflations- bzw. Deflationsfaktoren gebildet. Die aktuelle Spielzeit dient als Basisjahr, sodass die Multiplikation einer historischen Ablösezahlung mit dem jeweiligen Jahresfaktor zu einer Hochrechnung auf die aktuelle Marktentwicklung führt (vgl. Fischer et al., 2006, S. 319 f.; Baetge et al., 2013, S. 315 f.). Abbildung 2 illustriert die Schritte des Scoring-Modells.

Im nächsten Schritt werden die Merkmalsausprägungen der spielerspezifischen wertrelevanten Kriterien in Prozentpunkte umgewandelt. Die beobachtbare niedrigste Ausprägung erhält 0%, während die höchste Ausprägung 100% erhält. Die dazwischenliegenden Ausprägungen werden, sofern ein geeignetes Transformationssystem fehlt, anhand einer Befragung von Fachleuten der Branche (z.B. Trainer und Club-Funktionäre) in Prozentpunkte transformiert. Aus den subjektiven Antworten lassen sich Durchschnittswerte ermitteln, die intersubjektiv nachprüfbar bzw. objektiv sind. Länderspieleinsätze und Liga-Einsatzzeiten können sinnvoll ohne Befragung transformiert werden. Diese werden in einem weiteren Schritt durch die FIFA-Weltrangliste (Nationalmannschaften) und der UEFA-Fünfjahreswertung (nationale Ligen) angepasst, da Einsätze in „besseren" Nationalmannschaften und Ligen implizieren, dass die Spieler mehr „Wert" sind bzw. bessere fußballerische Fähigkeiten besitzen (vgl. Baetge et al., 2013, S. 316).

Die Spielstärke ist vieldeutig und kann durch diverse Eigenschaften ermittelt werden. Daher kann auf die Datenbank des Unternehmens Opta zurückgegriffen werden, die für Spieler der größeren Ligen umfassende Leistungsdaten erhebt. Die Ausprägungen der Leistungseigenschaften werden in einem weiteren Scoring-Modell durch Befragung in Prozentpunkte umgewandelt, ehe durch Gewichtung ein finaler Wert für die Spielstärke ermittelt wird. Das Scoring-Modell „Castrol Edge Ranking" tut dies bereits und kann aufgrund der Transparenz und umfangreichen Datenbasis verwendet werden. Die Ausprägungen der Spielstärke werden analog

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| **Auswahl der zu berücksichtigenden Kriterien** |

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| **Festlegung der Messdimensionen** |

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| **Transformation in Punktwerte** |

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| **Gewichtung der Kriterien** |

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| **Ermittlung des Gesamtpunktwerts** |

| |
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| **Transformation in monetären Wert** |

**Abbildung 2:** Die sechs Schritte des Scoring-Modells nach Baetge et al. (2013), in Anlehnung an Baetge et al., 2013, S. 314.

auf Prozentpunkte zwischen 0% und 100% normiert. Für Spieler der Ligen, die nicht durch Opta erfasst werden, ist die Spielstärke anhand eines weiteren Scoring-Modells wie beschrieben zu ermitteln. Hierbei gilt zu beachten, dass die Gewichtung der Eigenschaften in Abhängigkeit der Spieler- position erfolgen soll (vgl. ebd., S. 316 f.). So ist z.B. die Zweikampfquote wichtiger für einen Abwehrspieler, wäh- rend die Toranzahl zentraler für einen Stürmer ist (vgl. Fi- scher et al., 2006, S. 315).

Das Vermarktungspotenzial bedarf keiner Umfrage und kann anhand der Anzahl an verkauften Trikots mit dem Na- men des Spielers und spielerspezifischen Werbeverträgen ab- geleitet werden, setzt aber voraus, dass die Zahlen zugäng- lich sind. Die Restvertragslaufzeit (in Monaten) lässt sich ebenfalls eindeutig transformieren. Hierbei wird berücksich- tigt, dass der Wert des Spielers mit Abnahme der Vertrags- laufzeit sinkt, da bei einem ablösefreien Abgang keine Ablö- sesumme erwirtschaftet wird. Die maximale Vertragslaufzeit von Lizenzspielern beträgt fünf Jahre. Die Spielerposition hingegen bedarf einer Transformation durch Befragung. Die Befragten werden aufgefordert einen Prozentsatz von 100% auf die Positionen Tor, Abwehr, Mittelfeld und Sturm aufzu- teilen. Falls keine Befragung vorliegt, kann die Transforma- tion nur subjektiv anhand historischer Ablösezahlungen für Spieler mit unterschiedlichen Positionen erfolgen (vgl. Baet- ge et al., 2013, S. 317).

Beim Alter soll von den Befragten berücksichtigt wer- den, dass die Höhe der Ablösezahlungen im Datensatz von Eschweiler und Vieth (2004, S. 682) bis zum Alter von 26,6 Jahren steigt und danach fällt. Dies liegt darin begründet, dass Spieler mit zunehmendem Alter erfahrener werden, aber ab einer gewissen Grenze der physische Leistungsabfall beginnt. Ferner gilt zu beachten, dass Verträge mit Spielern gemäß Anhang V Lizenzierungsordnung erst ab Vollendung

des 15. Lebensjahres geschlossen werden können und für Spieler ab 35 Jahren i.d.R. keine Ablösezahlungen mehr fäl- lig sind. Fehlt eine Experten-Umfrage, könnte folglich einem Alter zwischen 15 und 26,6 Jahren ein steigender und einem Alter zwischen 26,7 und 35 Jahren ein sinkender Prozent- satz zugeordnet werden (vgl. Baetge et al., 2013, S. 317). Interessant ist, dass die Ablösehöhe in dem Datensatz nicht mit der Anzahl an Ligaeinsätzen abnimmt, obwohl dies i.d.R. mit einem höheren Alter einhergeht. Demnach steigt die Ab- lösezahlung mit der Ligaerfahrung (vgl. Eschweiler & Vieth, 2004, S. 682).

Sind die Prozentpunkte der sieben Kategorien ermittelt, werden diese mit der jeweiligen Gewichtung multipliziert werden. Diese lässt sich ebenfalls aus einer Expertenbefra- gung herleiten und kann bis zum Vorliegen durch die DFL vorgegeben werden. Abschließend werden die gewichteten Prozentpunkte summiert, was den finalen Punktwert ergibt. Aus der Marktwertkurve kann nun der durchschnittliche Transferpreis für Spieler mit vergleichbaren Punktwerten abgelesen werden. Die historischen Transferpreise werden dafür auf die aktuelle Marktentwicklung hochgerechnet (vgl. Baetge et al., 2013, S. 318).

Rapp (2014, S. 155 f.) kritisiert die Aussage von Baetge et al. (2013, S. 311), wonach ein objektiver Spielerwert, also ein durch das Scoring-Modell ermittelter Spielerwert, als Ori- entierung für einen Ablösepreis dienen kann. Es wird zwar zugestimmt, dass Vertragsparteien unterschiedliche subjekti- ve Prämissen haben, diese aber eben nicht aufdecken. In Ver- handlungen werden Argumentationswerte eingebracht, die zu einem Vermittlungswert führen, dem die beteiligten Par- teien zustimmen, wenn dieser innerhalb der Konzessions- grenze liegt. Daraus folgt, dass ein verhandelter Preis nicht durch die Offenlegung und Anpassung von subjektiven Prä- missen entsteht, sondern durch Einigung auf einen angemes-

senen Preis innerhalb des Einigungsbereiches. Demzufolge ist ein Ablösepreis für einen Spieler nicht objektiv und hängt von den subjektiven Wertvorstellungen sowie der Verhandlungsmacht der Vertragsparteien ab. Der Ablösepreis spiegelt demnach nur den Wert des Spielers für die jeweilige Verhandlungssituation wider. Ein objektvierter Spielerwert nach dem Scoring-Modell kann zwar für verbands- und rechnungslegungsrechtliche Zwecke verwendet werden, wird aber nicht den Ablösepreis eines Spielers bestimmen.

Somit kann auch die letzte allgemein anerkannte Bewertungsmethode (vgl. § 255 Abs. 4 S. 2 HGB) für den beizulegenden Zeitwert nach HGB, der Verkaufspreis, nicht ermittelt werden. Obwohl das handelsrechtliche Schrifttum die Ermittlung des beizulegenden Zeitwertes anhand eines marktpreisorientierten Verfahrens wie das Scoring-Modell im Gegensatz zu den IFRS nicht vorsieht, sollte einer Anwendung in Anbetracht fehlender Alternativen für Spielerwerte nichts entgegenstehen.

### 4.2.2. Nachträgliche Anschaffungskosten

Für die Folgebewertung sind auch bedingte Zahlungen, die schon im Zeitpunkt der Verpflichtung eines Spielers vereinbart wurden, relevant und im Profifußball nicht untypisch. So ist denkbar, dass eine Zahlung an den Spielerberater fällig wird, wenn „sein" Spieler zu einem gewissen Zeitpunkt noch Spieler des Clubs ist (bedingte Beraterhonorare). Ferner können Zahlungen an den abgebenden Club erfolgen, wenn gewisse sportliche Ziele oder Mindesteinsatzzeiten erreicht werden (bedingte variable Transferentschädigungen, vgl. Schröder & Specht, 2020, S. 961). Nach § 255 Abs. 1 S. 2 HGB gehören zu den Anschaffungskosten auch Kosten, die nachträglich anfallen, vorausgesetzt es existiert ein unmittelbarer wirtschaftlicher Zusammenhang zu der Anschaffung. Diese können theoretisch Jahre nach der Anschaffung anfallen. Zu den nachträglichen Anschaffungskosten zählen insb. bedingte (variable) Kaufpreise (vgl. Schubert & Gadek, 2020, § 255 HGB Rn. 75 f.).

Die Frage der Aktivierbarkeit von nachträglichen Anschaffungskosten nach HGB und IFRS stützt sich im Wesentlichen auf die Argumentation von Schröder und Specht (2020, S. 961 f.), welche insbesondere die jüngste Verlautbarung des International Financial Reporting Interpretations Committee (IFRIC) zu dem Thema zitiert. So werden bedingte Beraterhonorare und bedingte variable Transferentschädigungen nach Handelsrecht bei Eintritt der Bedingung als nachträgliche Anschaffungskosten aktiviert, da ein unmittelbarer wirtschaftlicher Zusammenhang zu der Anschaffung besteht. Gleichzeitig gelten sie als aufschiebend bedingte Verbindlichkeiten und werden gleichzeitig passiviert. Gegebenenfalls muss vorher eine Rückstellung für ungewisse Verbindlichkeiten gebildet werden, wenn der Eintritt der Bedingung hinreichend wahrscheinlich ist (vgl. Schubert, 2020, § 247 HGB Rn. 224). Jedoch darf keine Rückstellung für ungewisse Verbindlichkeiten gebildet werden, wenn die künftigen Ausgaben als Anschaffungskosten aktivierungspflichtig sind (vgl. Schubert, 2020, § 249 HGB Rn. 24), was bei den Zahlungen der Fall ist. Stattdessen sind die poten-

ziellen Verpflichtungen als sonstige finanzielle Verpflichtung im Anhang anzugeben (vgl. Grottel, 2020, § 285 HGB Rn. 96, 98; Schröder & Specht, 2020, S. 961).

Nach IAS 38.20 existieren nachträgliche Anschaffungskosten nur sehr selten. Daher kommt zusätzlich zum Vorgehen nach Handelsrecht, eine Aktivierung der bedingten (variablen) Zahlungen als Teil der Anschaffungskosten zum Erwerbszeitpunkt in Betracht. In dem Fall wird zeitgleich eine betragsgleiche Verbindlichkeit in Höhe des Fair Values der zu erwartenden Zahlungen passiviert. Das IFRIC hat bezüglich der Abbildung von bedingten Zahlungen „Diversity in Practice" beobachtet, sodass beide Methoden anwendbar sind. Für das Vorliegen von nachträglichen Anschaffungskosten spricht, dass die Zahlungen mit einer Erhöhung des zukünftigen wirtschaftlichen Nutzens einhergehen. Der Spieler kann einerseits länger eingesetzt werden und andererseits sind höhere zukünftige Erträge bzw. Cashflows beim Erreichen von sportlichen Zielen zu erwarten. Der Spieler trägt zum Erreichen dieser Ziele bei, in Folge u.a. Einnahmen aus der TV-Vermarktung steigen (vgl. Schröder & Specht, 2020, S. 961 f.). In der Bundesliga z.B. ist die Verteilung der TV-Gelder vom erreichten Tabellenplatz abhängig (vgl. Kicker, 2020).

### 4.3. Abgangsbewertung nach HGB und IFRS

Bei Vertragserfüllung scheidet der Spielerwert aus der Bilanz aus. Spannender ist die Frage, wie ein vorzeitiger Verkauf zu bewerten ist. Grundsätzlich wird bei einem vorzeitigen Abgang bzw. Verkauf von (immateriellen) Anlagevermögen die Differenz zwischen Verkaufspreis und Buchwert nach beiden Standards als sonstiger betrieblicher Ertrag bzw. Aufwand verbucht (vgl. Schmidt & Kliem, 2020, § 275 HGB Rn. 91; IAS 38.113). Es soll im Folgenden untersucht werden, ob sich die Ablösezahlung, die ein Club erhält, als Umsatzerlöse qualifizieren lässt. Seit dem Bilanzrecht-Umsetzungsgesetz (BilRUG) ist der Bezug zur gewöhnlichen Geschäftätigkeit für einen Ausweis als Umsatzerlöse nicht mehr erforderlich. Umsatzerlöse liegen jedoch nur bei Lieferungen und Leistungen vor, die sich auf Produkte und Dienstleistungen des Unternehmens beziehen. Produkte eines Unternehmens bestehen aus Erzeugnissen und Waren (Umlaufvermögen). Vermögensgegenstände des Anlagevermögens können jedoch auch ohne Zugehörigkeit zu den Erzeugnissen und Waren als Produkte klassifiziert werden, wenn diese regelmäßig im Rahmen der Geschäftätigkeit veräußert werden. Darunter kann auch der Verkauf von Anlagevermögen fallen, wenn das Unternehmen ein duales Geschäftsmodell verfolgt. Als Beispiel sind Immobilienunternehmen zu nennen, die ihre Immobilien einerseits durch Mieteinnahmen und andererseits durch Verkauf verwerten (vgl. Schmidt & Kliem, 2020, § 275 HGB Rn. 48-50; IDW HFA 2015, zitiert nach Schmidt & Kliem, 2020, § 275 HGB Rn. 50).

Ein duales Geschäftsmodell ist auch im Profi-Fußball zu erkennen. Nach dem Bosman-Urteil konnte beobachtet werden, dass Fußballvereine längerfristige Arbeitsverträge unterzeichneten, um dennoch Ablösezahlungen zu erhalten. So

liegt der Unternehmensnutzen einerseits im Einsatz und andererseits im Verkauf des Spielers. Letztere sind regelmäßig und branchentypisch (vgl. Pellens, Küting & Schmidt, 2019a, S. 2480; Schröder & Specht, 2020, S. 964). Folglich wird der Verkauf eines Spielers nach HGB als Umsatzerlöse ausgewiesen. Der Transferzahlung steht ein Rechtsverzicht des abgebenden Clubs gegenüber (vgl. Rade & Stobbe, 2009, S. 1110). Daher ist zu prüfen, ob die Vertragsaufhebung als Dienstleistung klassifiziert werden kann. Eine Dienstleistung liegt vor, wenn ihr ein Leistungsaustausch bzw. ein Leistungsentgelt gegenübersteht (vgl. Schmidt & Kliem, 2020, § 275 HGB Rn. 52; IDW HFA 2015, zitiert nach Schmidt & Kliem, 2020, § 275 HGB Rn. 52). Die Zahlung einer Ablösezahlung kann als Leistungsentgelt identifiziert werden (vgl. Kapitel 3.2), sodass folglich eine Dienstleistung vorliegt und ein Ausweis als Umsatzerlöse erfolgt.

Nach den IFRS konnte „Diversity in Practice" bezüglich der Abbildung als Anlagenabgang oder der Erbringung einer Dienstleistung beobachtet werden. Beim Abgang ist IAS 38.113 einschlägig, sodass die Differenz zwischen Ablösepreis und Buchwert unter den sonstigen betrieblichen Aufwendungen bzw. Erträgen ausgewiesen wird. IAS 16.68a beinhaltet für Sachanlagevermögen eine Sonderregel, die es erlaubt, Vermögen, dass im Rahmen der Geschäftätigkeit zunächst vermietet und dann verkauft wird, vor dem Verkauf als Umlaufvermögen zu klassifizieren und folglich als Umsatzerlöse auszuweisen. So ein Geschäftsmodell kann zwar auch im Fußballgeschäft beobachtet werden, aber eine analoge Bewertung setzt nach IAS 8.10 f. eine Regelungslücke voraus, die durch IAS 38.113 nicht vorliegt (vgl. Schröder & Specht, 2020, S. 965).

Nach den IFRS werden Erlöse als ein Ertrag aus der gewöhnlichen Geschäftätigkeit definiert (vgl. Anhang A IFRS 15). Als Erlöse gelten nur Gegenleistungen in Form von Gütern und Dienstleistungen. Dafür ist ein Vertrag mit einem Kunden notwendig (vgl. IFRS 15.6). Die gewöhnliche Geschäftätigkeit wird zwar nicht definiert, kann aber im Kerngeschäft des Unternehmens angenommen werden, sodass der Verkauf von Fußballern dazu zählt (vgl. Pellens, Küting & Schmidt, 2019b, S. 2530 f.). Nach IFRS 15.26d wird u.a. „die Ausführung einer vertraglich vereinbarten Aufgabe" als Dienstleistung definiert. Grundsätzlich ist jede Leistung nach IFRS 15.22 separat zu erfassen. Eine separate Erfassung erfolgt nach IFRS 15.27, wenn der Kunde aus der Dienstleistung einen gesonderten Nutzen ziehen kann. Während neben der Vertragsaufhebung (Hauptleistungspflicht) auch das Hochladen der notwendigen Unterlagen in TOR (Nebenleistungspflicht) vereinbart wird, kann aufgrund der Abhängigkeit dieser Pflichten nach IFRS 15.29c ein Leistungsbündel nach IFRS 15.30 identifiziert werden. Gemäß IFRS 15.31 i.V.m. 15.33 gilt die Dienstleistung kurzzeitig als Vermögenswert und wird als Erlös erfasst, sobald die Verfügungsgewalt übergeht bzw. die Leistungspflicht erbracht wird (vgl. Pellens et al., 2019b, S. 2532).

In dem Fall existiert zwar ein Leistungsbündel, aber die Aufhebung des Vertrages wird als substanzielle Leistungspflicht identifiziert, da in dem Moment der aufnehmende Club einen Arbeitsvertrag mit dem Spieler schließen und den Nutzen ziehen kann, während der abgebende Club auf die Einsatzmöglichkeit verzichtet. Das Hochladen der Unterlagen ist „nur" eine Nebenleistungspflicht. Nach IFRS 15.38d gilt die Verfügungsmacht in dem Moment als übertragen, in dem die signifikanten Risiken und Chancen übergehen. Dabei ist zu beachten, dass Transferverträge nur gültig sind, wenn der Spieler die Sporttauglichkeits-Untersuchung besteht und den Arbeitsvertrag unterzeichnet. Diese sind nach IFRS 15.B7 substanzielle Bedingungen, sodass der Erlösausweis erst dann erfolgen darf (vgl. Pellens et al., 2019b, S. 2532 f.). Dieser Zeitpunkt kann auch nach § 252 Abs. 1 Nr. 4 als Gewinnrealisierungszeitpunkt nach HGB betrachtet werden. Die Erfüllung verbandsrechtlicher Formalia hat keinen Einfluss auf den Realisationszeitpunkt. Auch der Abgangserfolg nach IAS 38.113 kann aufgrund fehlender Regelungen in dem Moment ausgewiesen werden (vgl. Schröder & Specht, 2020, S. 964 f., 966).

Aufgrund der beobachtbaren „Diversity in Practice" nach IFRS veröffentlichte das IFRIC im Juni 2020 eine vorläufige Agenda-Entscheidung und erachtete IAS 38.113 für die Abbildung der Ablösesumme als maßgeblich. Demnach handelt es sich um einen Anlagenabgang. Ein Ausweis als Umsatzerlöse nach IFRS 15 ist nur möglich, wenn die Spielerlaubnis dem Vorratsvermögen (Umlaufvermögen) nach IAS 2 zugeordnet wird. Nach IAS 2.2 ist der Standard für immaterielle Vermögenswerte anzuwenden, welche die Definitionskriterien von Vorräten erfüllen. Diese werden in IAS 2.6a und 2.6b als „Vermögenswerte, die zum Verkauf im normalen Geschäftsgang gehalten werden" oder „die sich in der Herstellung für einen solchen Verkauf befinden" definiert. Dies kann auf Clubs zutreffen, die Spieler zum Verkauf verpflichten oder zum Verkauf entwickeln, aber die Zuordnung zum Anlage- oder Umlaufvermögen hat „on initial recognition" zu erfolgen (vgl. Schröder & Specht, 2020, S. 966; IFRIC 2020). Dass ein Club bereits bei der Verpflichtung weiß, ob der Spieler langfristig eingesetzt oder verkauft wird, ist nicht anzunehmen (vgl. Schröder & Specht, 2020, S. 966) - i.d.R. verpflichten Clubs Spieler für ersteres. Falls jedoch zweiteres der Fall ist, wird die Ablösesumme als Erlöse ausgewiesen.

## 5. Gegenüberstellung der Bilanzierung von Spielerwerten nach HGB und IFRS

In diesem Kapitel wird anhand der fiktiven Bundesligisten „1. Fußball-Club (FC) HGB" und „Sport-Club (SC) IFRS", die nach dem im Namen enthaltenen Rechnungslegungsstandard bilanzieren, die in den vorherigen Kapiteln dargelegte Bilanzierung von Spielerwerten gegenübergestellt. Es wird angenommen, dass alle Zahlungen bei Fälligkeit geleistet werden.

Zugangsbewertung Erwerb (vgl. Kapitel 4.1.1): Das Geschäftsjahr des 1. FC HGB (SC IFRS) erstreckt sich auf den Zeitraum 01.07. bis 30.06. (Spieljahr). Der Spieler Toni Schnellschuss wird vom SC Fußball verpflichtet. Dafür einigt man sich auf eine Ablösezahlung i.H.v. 1 MEUR. Der

Spieler besteht die Sporttauglichkeits-Untersuchung und unterschreibt den Arbeitsvertrag am 01.07.2020. Dieser ist bis zum 30.06.2025 datiert und beschert dem Spieler ein jährliches Gehalt von 500 Tausend Euro (TEUR). Ferner wird für den Abschluss des Transfers eine Provisionszahlung i.H.v. 200 TEUR an den Spielerberater und ein Handgeld i.H.v. 100 TEUR an den Spieler fällig.

- 1. FC HGB und SC IFRS: Die Spielerlaubnis wird aktiviert und mit 1,3 MEUR bewertet (Ablösezahlung + Provision + Handgeld). Der jährliche Personalaufwand beträgt 500 TEUR. Stellt das Handgeld eine Gehaltsvorauszahlung dar, wird die Spielerlaubnis mit 1,2 MEUR aktiviert und ein ARAP i.H.v. 100 TEUR gebildet. Der jährliche Personalaufwand beträgt in dem Fall 520 TEUR. Die Spielerlaubnis wird zum Zeitpunkt der Erfüllung der letzten aufschiebenden substanziellen Bedingung des Transfervertrages (Bestehen der Sporttauglichkeits-Untersuchung und Vertragsunterzeichnung) aktiviert, also am 01.07.2020.

Zugangsbewertung Spielertausch (vgl. Kapitel 4.1.3): Die Gegenleistung von Toni Schnellschuss besteht aus der Hingabe von Rüdiger Blitzschnell (Buchwert 500 TEUR) und einer Baraufgabe i.H.v. 200 TEUR. Trotz fehlender Verfahren in der Praxis wird angenommen, dass die beizulegenden Zeitwerte der Spieler ermittelbar sind. Der beizulegende Zeitwert von Toni Schnellschuss (Rüdiger Blitzschnell) beträgt 1,3 MEUR (1 MEUR). Für den 1. FC HGB ergibt sich eine Ertragssteuerbelastung i.H.v. 20 TEUR aus dem Veräußerungsgeschäft.

- 1. FC HGB: Bei der Gewinnrealisierung wird Toni Schnellschuss zum beizulegenden Zeitwert von Rüdiger Blitzschnell zzgl. der Baraufgabe bewertet (1,2 MEUR). Es ergibt sich ein Gewinn, weil die Baraufgabe die Differenz zwischen den beizulegenden Zeitwerten der Spieler nicht vollständig kompensiert. Während der SC Fußball eine Leistung i.H.v. 1,3 MEUR erbringt (Zeitwert Toni Schnellschuss), hat die Gegenleistung vom 1. FC HGB „nur" einen Wert von 1,2 MEUR (Zeitwert Rüdiger Blitzschnell zzgl. Baraufgabe). Folglich entsteht ein Gewinn i.H.v. 100 TEUR. Entscheidet sich der Club zur Buchwertfortführung, erfolgt die Bewertung zum Buchwert von Rüdiger Blitzschnell zzgl. der Baraufgabe, also zu 700 TEUR. Bei der ergebnisneutralen Methode wird die Ertragssteuerbelastung auf die Anschaffungskosten (AK) nach Buchwertfortführung hinzuaddiert. Folglich ergeben sich AK von 720 TEUR.

- SC IFRS: Die Bewertung erfolgt vorrangig zum beizulegenden Zeitwert, scheitert aber an fehlender wirtschaftlicher Substanz, da Fußballspieler i.d.R. keine zurechenbaren Zahlungsströme verursachen. Folglich erfolgt die Bewertung zum Buchwert von Rüdiger Blitzschnell zzgl. der Baraufgabe, also zu 700 TEUR.

Zugangsbewertung Spielerleihe (vgl. Kapitel 4.1.2): Der 1. FC HGB (SC IFRS) leiht Toni Schnellschuss gegen eine Leihgebühr in Höhe von 400 TEUR für zwei Jahre aus. Ferner einigen sich die Clubs, dass ein Teil des Jahresgehaltes (300 TEUR) übernommen wird. Der Arbeitsvertrag von Toni Schnellschuss läuft noch vier Jahre.

- 1. FC HGB: Obwohl an den Chancen und Risiken des Spielers während der Leihe partizipiert wird, kehrt dieser zum SC Fußball zurück. Daher trägt der SC Fußball die langfristigen Chancen und Risiken des Spielers. Ferner verbleiben die Transferrechte beim SC Fußball, wodurch der Spieler während der Leihe nicht verwertet werden kann und folglich das wirtschaftliche Eigentum nicht auf den 1. FC HGB übergeht. Deshalb darf der Spieler nicht in die Bilanz aufgenommen werden. Die Leihgebühr ist anhand eines ARAP auf zwei Jahre aufzuteilen. Der jährliche Leihaufwand beträgt somit 200 TEUR. Hinzu kommen jährliche Personalaufwendungen i.H.v. 300 TEUR.

- SC IFRS: Es kann einerseits nach IAS 38 und andererseits nach IFRS 16 bilanziert werden. Nach IAS 38 wird der Spielerwert als immaterieller Vermögenswert über die Leihdauer aktiviert und abgeschrieben. Folglich entsteht ein jährlicher Abschreibungsaufwand i.H.v. 200 TEUR und Personalaufwand i.H.v 300 TEUR. Die Aktivierung ist möglich, da das wirtschaftliche Eigentum für den Bilanzansatz nach IFRS nicht erforderlich ist. Nach IFRS 16 wird die Nutzungsmöglichkeit des Spielers („value of use") aktiviert. Das Nutzungsrecht wird mit der Leihgebühr bewertet und ist über die Leihdauer abzuschreiben. Demnach besteht betragsmäßig kein Unterschied zur Methode nach IAS 38.

Folgebewertung nachträgliche Anschaffungskosten (vgl. Kapitel 4.2.2): Am 30.06.2023 wird eine Zahlung i.H.v. 100 TEUR an den Spielerberater von Toni Schnellschuss fällig, da dieser immer noch Spieler des Clubs ist. Ferner wird eine Zahlung i.H.v. 200 TEUR an den SC Fußball fällig, da der 1. FC HGB/SC IFRS die Saison 2022/2023 als Meister beendet hat. Der Buchwert von Toni Schnellschuss beträgt zum 30.06.2023 600 TEUR.

- 1. FC HGB und SC IFRS: Nach dem HGB sind nachträgliche Anschaffungskosten keine Seltenheit. Diese liegen bei einem Bezug zur Anschaffung vor und können auch noch Jahre danach entstehen. Zu den typischen nachträglichen Anschaffungskosten zählen bedingte Zahlungen. Die Zahlungen im Sachverhalt sind der Anschaffung des Spielers eindeutig zurechenbar und werden in Folge des Erreichens von gewissen Kriterien fällig, die im Transfervertrag vereinbart sind. Daher bilden die Zahlungen nachträgliche Anschaffungskosten und werden folgerichtig aktiviert. Der Buchwert von Toni Schnellschuss steigt somit von 600 TEUR auf 900 TEUR bei Eintritt der Fälligkeit (30.06.2023). Nach IAS 38 existieren nachträgliche Anschaffungskosten zwar sehr selten, können in diesem Fall aber analog identifiziert und aktiviert werden, da durch

die zahlungsauslösenden Bedingungen ein erhöhter zukünftiger Nutzen erwartbar ist.

Abgangsbewertung Verkauf (vgl. Kapitel 4.3): Der SC Fußball möchte Toni Schnellschuss zurückverpflichten. Dieser ist dem Wechsel nicht abgeneigt, da er bereits in der Jugend für den Club auflief und Familie im Umkreis hat. Dem 1. FC HGB (SC IFRS) kommt dies gelegen, da Toni Schnellschuss seinen Vertrag (Restvertragslaufzeit 1 Jahr) nicht verlängern möchte und so eine Ablösezahlung erzielt. Der Spieler wurde ursprünglich zum Einsatz verpflichtet. Die Clubs einigen sich auf eine Ablösezahlung i.H.v. 600 TEUR. Toni Schnellschuss besteht am 01.07.2024 die Sporttauglichkeits-Untersuchung und unterschreibt den neuen Arbeitsvertrag. Der Buchwert von Toni Schnellschuss beträgt zum 01.07.2014 300 TEUR.

- 1. FC HGB: Einerseits kann der Wechsel als Anlagenabgang und andererseits kann die Aufhebung des Vertrages als Erbringung einer Dienstleistung klassifiziert werden. Aufgrund des dualen Geschäftsmodells von Fußballclubs, das aus Einsatz und späterem Verkauf besteht, wird die Ablösesumme als Umsatzerlöse ausgewiesen. Da der Vertragsaufhebung ein Leistungsentgelt gegenübersteht (Ablösezahlung), liegt auch eine Dienstleistung vor, in Folge die Ablösesumme analog als Umsatzerlöse ausgewiesen wird. Dem Umsatz i.H.v. 600 TEUR steht ein sonstiger betrieblicher Aufwand i.H.v. 300 TEUR entgegen, um den Vermögensgegenstand aus der Bilanz zu entfernen.

- SC IFRS: Die Ablösezahlung stellt einen Anlagenabgang dar. Demnach erfolgt ein Netto-Ausweis, wodurch sich ein sonstiger betrieblicher Ertrag i.H.v. 300 TEUR aus der Differenz zwischen Ablösezahlung und Buchwert ergibt. Ein Ausweis als Erlöse ist nicht möglich, da der Club den Spieler ursprünglich nicht zum Verkauf verpflichtet hat.

## 6. Fazit und Ausblick

Während die Spielerlaubnis die Kriterien eines Vermögenswertes zweifelsfrei erfüllt, wird die Eigenschaft als Vermögensgegenstand umso stärker in der Literatur angezweifelt. Insbesondere das Kriterium der selbstständigen Verkehrsfähigkeit bietet Raum für Diskussionen, welches anlässlich des Gläubigerschutzes unerlässlich ist. Ausgangspunkt ist das Urteil des Bundesfinanzhofes aus dem Jahr 1992, dass die Bilanzierungsfähigkeit bestätigt. Seitdem werden geleistete Ablösezahlungen für den Wechsel eines Spielers in der Bilanz aktiviert. Auch nach dem Bosman-Urteil des Europäischen Gerichtshofes, welches das damalige Transfersystem maßgeblich beeinflusst hat, hält der Bundesfinanzhof an der Argumentationsweise fest, sodass es sich bei der Aktivierung von Spielerlaubnissen um gefestigte Rechtsprechung handelt.

Bezüglich der Bewertung zwischen den Rechnungslegungsstandards bestehen wenige, aber gravierende Unterschiede. Insbesondere bei der Bewertung von Spielerleihen wird deutlich, dass der Gläubigerschutz kein Ziel der IFRS ist. Stattdessen sollen entscheidungsnützliche Informationen für den Kapitalmarkt bereitgestellt werden, was tendenziell mit einer „mutigeren" Bilanzierung einhergeht, was bei der Aktivierungsfähigkeit von Spielerleihgeschäften bestätigt wird. Gegenläufig zu dieser Betrachtungswiese ist die Bewertung von Spieler-Abgangsgeschäften. Während nach Handelsrecht eindeutig ein Brutto-Ausweis als Umsatzerlöse erfolgt, wird die Ablösesumme nach den IFRS Netto als sonstiger betrieblicher Ertrag oder Aufwand ausgewiesen. Ein Ausweis als Erlöse ist nur möglich, wenn der Club den Spieler zum Verkauf verpflichtet, was i.d.R. nicht der Fall ist. Daraus folgt, dass das Handelsrecht bei der Bewertung von Spieler-Abgangsgeschäften ausnahmsweise „mutiger" als die IFRS ist.

Darüber hinaus bestehen Unterschiede bei der Abbildung von Spielertauschgeschäften. Obwohl nach beiden Standards der Spielerwert zum beizulegenden Zeitwert bilanziert werden kann bzw. soll, was eine Seltenheit nach Handelsrecht darstellt und umso häufiger in den IFRS möglich ist, kann nach HGB zusätzlich ein Gewinn aus dem Spielertausch ausgewiesen werden. Diese Möglichkeit beinhaltet IAS 38 nicht. Ferner ist die Bewertung eines Spielertauschgeschäftes zum beizulegenden Zeitwert nach IFRS an strengere Kriterien geknüpft und durch die Notwendigkeit von wirtschaftlicher Substanz nahezu ausgeschlossen, da Fußballspieler grdsl. keine einzeln zurechenbaren Zahlungsströme verursachen.

Ein wichtiges Thema, das derzeit nur zu unzureichend bis gar nicht behandelt wird, bilden Verfahren zur Ermittlung des objektiven Marktwertes eines Spielers. Dies kann anlässlich diverser Zwecke erfolgen, erscheint aber insbesondere vor dem Hintergrund außerplanmäßiger Abschreibungen sinnvoll und sollte daher stärkere Betrachtung in der Zukunft erhalten. Insbesondere weil kein aktiver Markt für Fußballspieler oder vergleichbare Vermögensgegenstände bzw. -werte existiert und die sonstigen Bewertungskonzeptionen u.a. wegen fehlender zurechenbarer Zahlungsströme nicht angewendet werden können. Das vorgestellte Scoring-Modell, das insbesondere intersubjektiv nachprüfbar und objektiv ist, bietet einen Lösungsansatz, bedarf aber dem Mitwirken der Deutschen Fußball Liga, die über die erforderlichen Daten verfügt und der Experten bzw. Funktionären des Fußballgeschäfts. Insbesondere vor dem Hintergrund der jährlichen Club-Lizenzierung könnten hierdurch Spieler-Marktwerte berücksichtigt werden, was zu einem effizienteren Lizenzierungsverfahren führen würde.

Abschließend sollte die Rechnungslegung der Bundesligisten transparenter gestaltet werden. Einige Clubs der Bundesliga firmieren als eingetragener Verein und müssen folglich nur für steuerliche Zwecke einen Abschluss erstellen, der nicht offenlegungs- und prüfungspflichtig ist. Es ist indes zweifelhaft, ob ein Bundesligist überhaupt die Rechtsform eines eingetragenen Vereins haben sollte, da mit der Lizenzspielerabteilung Erträge und Aufwendungen in Millio-

nen Höhe erzielt werden, sodass die Berufung auf das Neben-
zweckprivileg als unzulässig erscheint. Eine transparentere
Rechnungslegung wird auch nicht durch den jährlich einzu-
reichenden Lizenzierungsabschluss erreicht, da dieser eben-
falls nicht der Offenlegung unterliegt und die zu berücksichti-
genden DFL-Rechnungslegungsgrundsätze mit dem HGB und
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# Winning when Going Global – On the Role of Heritage and Strategic Moves for Internationalization Endeavors of Start-ups

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**Abstract**

As the chief subjects for global progress, international new ventures (INVs) are gaining worldwide economic importance at an increasing pace. Most recently, they have received growing attention in the research literature because the validity of existing internationalization theories for has been questioned when used in a new venture setting. So far, prior literature has focused on understanding INV characteristics and the effect that their properties have on the internationalization performance. Aiming to develop a new framework for start-up internationalization, this thesis combines results from a quantitative study on the Strategic Moves of early internationalizing start-ups with results from a literature review on the Heritage of these new ventures. Within the study researching the Strategic Moves, data from 51 European start-ups show the optimal moves start-ups can undertake. The complementary literature review, based on 45 papers from the INV research field, shows what characteristics the ideal Heritage of an INV should consist of. Taken together, the findings construct the Startup Internationalization Framework which establishes the first holistic perspective on start-up internationalization.

*Keywords:* International new ventures; Early internationalizing start-ups; Internationalization strategy; Market entry; Global management.

## 1. Introduction

New ventures are the main subjects of worldwide economic growth by advancing technologies, enhancing productivity, and creating employment (Haltiwanger, Jarmin, Kulick, & Miranda, 2016; Tracy, 2011). For these new ventures, internationalizing successfully becomes increasingly crucial (Stucki, 2016). Yet, most of the existing research into the internationalization of firms has focused on well-established and large enterprises (Chandler, 1986). These domestic incumbents, often multi-business area conglomerates, have been the first enterprises to internationalize (Buckley & Casson, 1976; Hymer, 1960). With the advent of early internationalizing start-ups, new ventures that internationalize in the first years after being founded (Oviatt & Mc-Dougall, 1994) and born globals, new ventures that internationalize upon their founding (Rennie, 1993), this focus has shifted. Now, the international expansion of young firms receives attention from scholars and politicians (Naldi, Criaco, & Patel, 2020). So far, the research field of international new ventures (INVs) has covered the definition and catego-

rization of early internationalizing companies (Cieslik & Kaciak, 2009; Knight & Cavusgil, 1996a, 2004, 2005). More recently, the research has also examined the influence of a new venture's *Heritage* (i.e., environmental, industry-specific, and company-specific factors) on the speed and expected performance of the new ventures internationalization (Andersson, Gabrielsson, & Wictor, 2004; Evers, 2011b; Fernhaber, McDougall, & Oviatt, 2007; Mudambi & Zahra, 2018).

However, existing literature has thus far provided few insights into the internationalization strategies of this new breed of young multinational enterprises (MNEs). The concept of *Strategic Moves* entails international expansion planning, entry into new geographical markets, and the global management of operations in different countries (Daszkiewicz & Wach, 2012). Former research on these *Strategic Moves* is mainly conceptual in nature and the empirical studies that do exist are limited (Kim & Cavusgil, 2020).

The further development of research in the INV field which involves a combination of international business studies, international entrepreneurship, and strategy literature is

important because of the strong impact it has on the international (and overall) performance of new ventures. Markides and Ittner (1994) claim that there is a positive relationship between firm internationalization and firm performance. Oviatt and McDougall (1999) state more granularly that international expansion positively influences new ventures' survival, profitability, and growth. In addition, Zahra, Ireland, and Hitt (2000) not only show a positive relationship between internationalization and performance but also highlight the importance of organizational capabilities in this context. Most compelling, however, are the findings of Burrill and Almassy (1993), who claim that internationalization is expected to be a requirement for most firms – including new ventures. At the same time, Shaw and Darroch (2004) explain that an internationalization strategy is challenging to develop and demanding to execute in order to realize company growth.

The purpose of this work's quantitative study is to investigate the effect of different *Strategic Moves* on the internationalization performance of new ventures – or, as I refer to them throughout this thesis – of start-ups. The study aims to identify the most promising *Strategic Moves* for early internationalizing start-ups that lead to a high internationalization performance. The study will be complemented by a literature review regarding the effect a start-up's *Heritage* has on the speed and expected performance of internationalization. Collectively, the two research areas will lead to a holistic understanding of how the start-up's predetermined initial situation, its *Heritage*, together with the selected strategic steps, its *Strategic Moves*, influence the internationalization performance. The research question guiding this present research stated as follows:

> **RQ.** How and to what extent do the start-up's *Heritage* and *Strategic Moves* influence the internationalization performance?

The answer to the research question contributes to the much-needed shift from the fragmented, descriptive, and qualitative frameworks of start-up internationalization antecedents (Knight & Liesch, 2016) toward the integrated, predictive and quantitative research of start-up internationalization performance optimization (Cavusgil & Knight, 2015). Specifically, the answers derived from this thesis should provide a valuable understanding of the start-up internationalization activities that are part of their international growth path and possibly of their foreign direct investment (FDI) activities (Choquette, Rask, Sala, & Schröder, 2017). In their extensive literature review of born-globals research, Paul and Rosado-Serrano (2019, p. 847) recognized that "it would be [...] worth examining the [...] strategies of the firms that emerged as INVs/born globals because of their global success (firms like Uber, Amazon, Apple, Google, Facebook, Instagram, Airbnb)." The focus of this study on the quantitative data from multiple start-ups rather than on just a few case studies will make it possible to detect the best *Strategic Moves* made by successful, internationalizing start-ups. Additionally, the study will support the establishment

of a new direction for INV studies that focuses on corporate-level strategies and aims to enhance start-up international performance rather than only retracing internationalization activities.

To achieve these aims, I will first show the state of the art of INV research and the research gap that I focus on in this thesis. Then, I will introduce the theoretical background for the internationalization of start-ups and their *Heritage* and *Strategic Moves*. Concurrently, I will establish hypotheses regarding the *Strategic Moves* that I want to investigate with the quantitative study. Next, I explain the methodology for the regression analyses of my quantitative study on the *Strategic Moves* as well as the data collection, sample compilation, measure metrics and analytical techniques. I will then present the quantitative study analysis of the *Strategic Moves* and the results of the study and the literature review. Lastly, I discuss the findings and their limitations by bringing together the literature review on the *Heritage* and the study results on the *Strategic Moves* to conclude with practical implications and a potential research agenda for the future of the INV field.

## 2. State of the art of INV literature and research gaps

For contextualizing the content of this thesis, it is crucial to first form a common understanding of the prior research on INV and general International Management research. Additionally, I will show existing research gaps and highlight the research gaps I address within this work. Figure 1 summarizes the existing literature across two dimensions, the type of the internationalizing firm and the internationalization research aspect.

### 2.1. State of the art of INV literature

INV is a young research field, not more than 30 years old. Until the field emerged (and partly still today), studies regarding the internationalization of firms focused mainly on MNEs or their subsidiaries (Buckley & Casson, 1976; Chandler, 1986; Johanson & Vahlne, 1977). However, in the 1990s, the field of INV research emerged. The research dealt with the internationalization of the youngest firms possible, new ventures in their first weeks and months of existence, the so-called born globals (Knight & Cavusgil, 1996a; Rennie, 1993). Throughout the years, the youth of the firms has been neglected resulting in the internationalization research of early internationalizing start-ups. These start-ups do not internationalize at inception as born globals do, but rather do so in their first six to ten years of existence (McDougall, Shane, & Oviatt, 1994; Oviatt & McDougall, 1994). Nevertheless, results from born-global research were used to understand early internationalizing start-ups even though these firm categories are proven to be different. The first category is new and peculiar, while the second category is similar to MNEs. However, there are important differences between early internationalizing start-ups, which are the great majority of international new ventures, and MNEs (Gripsrud,

**Type of internationalizing firm**

| | | Born globals | Early internationalizing start-ups | Multinational enterprises |
|---|---|---|---|---|
| | Categorization and description | Rennie (1993), Oviatt and McDougall (1994), Knight (1996) | Rialp, Rialp and Knight (2005), Cieslik and Kaciak (2009) | Hymer (1960), Hymer (1970), Buckley and Casson (1976), Johanson and Vahlne (1977), Chandler (1986), Ghoshal and Nohria (1989), Yip (1989), Ghoshal and Bartlett (1990), Dunning (1994), Welch and Welch (1996), Ghemawat (2001), Dunning (2003), Hitt *et al.* (2006), Gooderham (2007), Johanson and Vahlne (2009), Dunning (2009), Dikova and Brouthers (2016), Kostova, Marano and Tallman (2016), Bartlett and Beamish (2018), Gooderham, Grøgaard and Foss (2019) |
| | Environmental factors | Baughn and Neupert (2003), Johnson (2004), Oviatt and McDougall (2005), Fernhaber, McDougall and Oviatt (2007), Nowiński and Rialp (2013) | | |
| | Industry factors | Oviatt and McDougall (1994), McDougall, Oviatt and Shrader (2003), Andersson (2004), Oviatt and McDougall (2005), Andersson, Evers and Kuivalainen (2014) | | |
| | Start-up characteristics | Johnson (2004), Oviatt and McDougall (2005), Zahra (2005), Loane and Bell (2006), Baum, Schwens and Kabst (2011), Falahat and Migin (2017) | | |
| | Strategic moves | Research gap, out of scope | **Research gap, in scope** | |
| | Comprehensive framework | Research gap, out of scope | **Research gap, in scope** | |

*(Left axis labels: Internationalization research aspect — Heritage / Strategic moves — Fragmented analyses / Comprehensive framework)*

*Note: The sources for the multinational enterprises focus in most cases on multiple internationalization research aspects and are therefore not displayed being attributed to one single research aspect but as being overarching for all research aspects to ensure the most appropriate visualization.*

**Figure 1:** State of the Art and Research Gap of International New Ventures and International Business Studies Research.

Hunneman, & Solberg, 2015; Kandasaami & Huang, 2000). This thesis will account for these differences, focusing primarily on *Strategic Moves* of early internationalizing start-ups along with analyses of their *Heritage,* thus creating a comprehensive framework for their internationalization.

The research in international business studies focusing on MNEs shows that MNEs' internationalization endeavors have been widely investigated. The categorization and description of MNEs began in the 1960s when Hymer (1960) raised the first question about why MNEs even exist when foreign business activities face so many liabilities and difficulties. Hymer (1960) answered this by reference to enhancing competitiveness and marginalizing smaller competitors in foreign markets. The argumentation fuelled the research string that provided considerable insight into the existence and descriptions of MNEs, covering the purpose, emergence and characteristics of all types of MNEs (e.g., Hymer, 1970; Nye, 1974; Ghoshal & Nohria, 1989; Ghoshal & Bartlett, 1990; Chandler & Mazlish, 2005; Aggarwal, Berrill, Hutson, & Kearney, 2011; Bartlett & Beamish, 2018). Furthermore, external environmental and industry-specific as well as internal firm-specific antecedents of MNE internationalization have been examined, evaluating internationalization barriers, host country institutional influences, the role of competition, and the effect of the top-management (e.g., Buckley

& Casson, 1976; Porter, 1979, 1980; Dunning, 2003; Hitt, Tihanyi, Miller, & Connelly, 2006). Finally, *Strategic Moves* have been widely researched in MNE context, and comprehensive frameworks have been developed that cover topics such as FDI decisions, entry modes, internationalization path, international strategies, knowledge transfer, and international human resource management (IHRM; e.g., Johanson & Vahlne, 1977, 2009; Agarwal & Ramaswami, 1992; Dunning, 1994; Ghemawat, 2001; Harzing, 2002; Gooderham, 2007; Kostova, Marano, & Tallman, 2016; Gooderham, Grøgaard, & Foss, 2019).

INV research emerged in the 1990s with the groundbreaking work of McDougall et al. (1994) and Oviatt and McDougall (1994) that picked up Rennie's (1993) and McKinsey & Company's findings on born globals. Since then, much progress on the studies of INVs has been made. Unfortunately, from the start, the INV research field did not sufficiently differ between born globals and early internationalizing start-ups. It did so only regarding the categorization and description of international new ventures, having differing findings for born globals (e.g., Rennie, 1993; McDougall et al., 1994; Oviatt & McDougall, 1994; Knight & Cavusgil, 1996a; Knight & Cavusgil, 2005) and early internationalizing start-ups (e.g., Rialp, Rialp, & Knight, 2005; Zucchella, Palamara, & Denicolai, 2007; Cieslik & Kaciak,

2009). INV research proceeded by adding new findings regarding the *Heritage* of INV and its effect on internationalization speed and expected international performance (e.g., Knight & Cavusgil, 2004; Oviatt & McDougall, 2005; Fernhaber et al., 2007; Nowiński & Rialp, 2013; Cannone & Ughetto, 2014; Cavusgil & Knight, 2015; Kim & Cavusgil, 2020). However, INV has not adequately *Strategic Moves*. To date, the literature shows only scattered findings in this area, and these are derived mostly from qualitative case studies (e.g., Hagen & Zucchella, 2014; Orero-Blat, Palacios-Marqués, & Garzón, 2020). Additionally, there is not comprehensive framework regarding either born globals or early internationalizing start-ups.

### 2.2. Research gaps

The state of INV research leads to the two research gaps addressed in this thesis. First, the influence of *Strategic Moves* on the internationalization performance of start-ups. Second, the comprehensive framework that contains both the *Heritage* and the *Strategic Moves* for the holistic perspective on the internationalization of start-ups (Choquette et al., 2017; Paul & Rosado-Serrano, 2019).

International new ventures research has agreed on the importance and necessity of an empirical and holistic approach to fully understand and map the factors that shape the internationalization process and determine the internationalization performance of start-ups (Lindqvist, 1991; Orero-Blat et al., 2020). So far, scholars have worked in different directions that have not yet been streamlined. Research into start-up capabilities focusing on the resource-based view established by Wernerfelt (1984) and Barney (1991) have investigated the effects of, for example, the employed technology, the historic channel experience, the international knowledge, and the financial and human capital on the internationalization performance (Burgel & Murray, 2000; Evers, 2011a; Gerschewski, Rose, & Lindsay, 2015; Naldi et al., 2020; Pinkwart & Proksch, 2014). Another research thread focusing on the market-based view established by Porter (1979, 1980) has investigated the role of the domestic market, the industry structure and competition, the industry life cycle, and the global integration of industry in the international new ventures setting (Andersson, Evers, & Kuivalainen, 2014; Cannone & Ughetto, 2014; Evers, 2010; Evers, Kuivalainen, & Andersson, 2015). Some researchers dealt with the importance of entry modes only and the effect of predetermined start-up characteristics on the entry mode choice (Baum, Schwens, & Kabst, 2011; Benito, Petersen, & Welch, 2009; Hagen & Zucchella, 2014; Ripollés, Blesa, & Monferrer, 2012). INV research has so far failed to find either significant results for *Strategic Moves* of international new ventures or a coherent framework that includes both the *Heritage* and the *Strategic Moves* for the internationalization of start-ups.

This subdivision of start-up internationalization into the two main areas of this thesis, the start-up's *Heritage* and its *Strategic Moves*, receives support from prior research. For instance, Mitchell, Shaver, and Yeung (1993) argued that inter-

nationalization outcomes are affected by an interdependent system of firm strategies and industry conditions. Similarly, Hitt, Li, and Xu (2016) named the antecedents of international expansion and the decisions regarding how to enter and act in foreign markets.

This thesis will expand the limited research on *Strategic Moves* within the INV field. At the same time, the thesis does recognize the significant differences between born globals and early internationalizing start-ups, focusing on the latter and leaving aside the former. It adds value by grounding the results on *Strategic Moves* within quantitative data linked to the internationalization performance of the surveyed start-ups, thus allowing for systematic recommendations for early internationalizing start-ups. Lastly, to account for a value-add comprehensive INV framework, the thesis will systematically collect findings on the *Heritage* of INVs from existing literature since the 1990s and present a coherent picture of the *Heritage* and the *Strategic Moves*.

## 3. Conceptual framework of start-up internationalization and hypotheses development

Synthesizing prior research, I created the conceptual model shown in Figure 2 that illustrates the various factors of *Heritage* and the *Strategic Moves* that influence the total internationalization performance of start-ups.

Based on Figure 2, I describe within this chapter the composition of both areas and explain the factors they contain. For the *Strategic Moves* only, I will additionally generate hypotheses from former MNE and INV literature, adjusted to the early internationalizing start-ups.

### 3.1. Heritage

A start-up's *Heritage* consists of the properties of a start-up that it possesses prior to its internationalization. According to existing literature, *Heritage* most often consists of three types of factors: environmental factors, industry factors and start-up characteristics. The first two factors are external, while the third one is internal (Fan & Phan, 2007; Johnson, 2004; Kandasaami, 1998; Nowiński & Rialp, 2013; Oviatt & McDougall, 2005). Collectively, these factors pre-set the starting position of a start-up before it internationalizes. They do not, however, directly influence internationalization performance but rather determine the speed of internationalization (Johnson, 2004; Oviatt & McDougall, 2005) and indicate the expected average internationalization performance (Martin & Javalgi, 2019; Sapienza, De Clercq, & Sandberg, 2005).

Not all the existing subfactors of environmental factors, industry factors and start-up characteristics will be considered in the subsequent presentation of the conceptual framework. Rather, only the most important subfactors, based on the findings from the existing literature will be examined to create an accurate, if not exhaustive, picture of a start-up's *Heritage*.
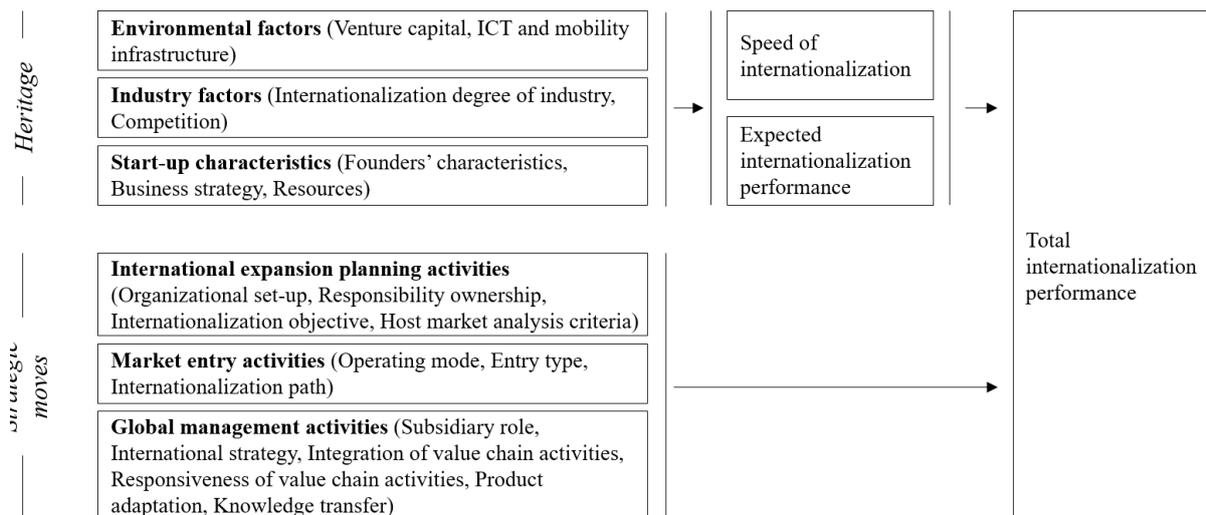
**Figure 2:** Effects of *Heritage* and *Strategic Moves* on Start-up's Internationalization Performance.

### 3.1.1. Environmental factors

Environmental factors are external, macroeconomic specificities (Wisetsri et al., 2021) stemming from the geographical setting a company – or, in this case, a start-up – operates in Ács, Autio, and Szerb (2014). For early internationalizing start-ups, this setting is the home country where it was founded.

While the research illustrates how different methods are used for analyzing a company's environment (Audretsch & Belitski, 2017; Lynch, 2009), there is consensus that understanding environmental factors is crucial for formulating strategies and gaining competitive advantages (Wennekers, Van Stel, Carree, & Thurik, 2010; Yüksel, 2012). These different methods for mature conglomerates and small- and mid-sized enterprises most often include political, economic, social, technological, ecological and legal factors (Dale, 2000; Richardson, 2006). Additionally, it has been shown that the home environment of a start-up significantly influences its international orientation and has a moderating effect on its international performance (Dimitratos, Lioukas, & Carter, 2004). For start-ups, various aspects including entrepreneurial opportunity, venture capital, human capital, infrastructure, political support and subsidization, process technology, legal ease/administrative burdens, protection of property rights, and social acceptance have been examined (Baughn & Neupert, 2003; Johnson, 2004; Martínez-Fierro, Biedma-Ferrer, & Ruiz-Navarro, 2020; Nowiński & Rialp, 2013; Oviatt & McDougall, 2005).

For this thesis, I focus on only two important environmental factors that influence a start-up's internationalization speed and expected performance. These factors are the availability of and access to venture capital and the infrastructure, including internet and telecommunications technologies (ICT) and transportation and mobility in start-up's home country. According to Cuervo-Cazurra, Luo, Ramamurti, and Ang (2018), these two factors are among the most impor-

tant ones for firm internationalization. Moreover, Fernhaber, Mcdougall-Covin, and Shepherd (2009) and Arenius, Sasi, and Gabrielsson (2005), note that they are among the most important factors for the internationalization of new ventures.

*Venture capital*

The availability of and access to venture capital is the degree of financing easiness. This environmental factor is important because financing a start-up is crucial for its continued existence and is an obstacle for start-up development in general (Green & Jenkins, 1998) and internationalization of new ventures in particular (Korsakienė & Tvaronavičienė, 2012). Furthermore, the presence of external sources of financing, most often venture capital, directly affects the internationalization speed of start-ups (Fernhaber et al., 2007). However, according to Gassmann and Keupp (2007) the effect of financing availability on internationalization speed and expected performance is ambiguous and depends on a start-up's main sources of competitive advantage.

*ICT and mobility infrastructure*

The infrastructure, which includes ICT and transportation and mobility, describes the degree of information gathering and connection easiness. Progress in infrastructure not only affected start-up internationalization in the 1990s (Bloodgood, Sapienza, & Almeida, 1996) but it also allowed start-ups in this decade to deal with liabilities of foreignness and lack of resources (Arenius et al., 2005). Therefore, infrastructure is widely seen as a crucial aspect when aiming to understand start-up internationalization (Kuemmerle, 2005) due to its profound ability to enhance intelligence regarding foreign markets and competitors (Fernández & Nieto, 2005) and its ability to create and retain connection to a high num-

ber of partners and customers (Loane, 2006).

### 3.1.2. Industry factors

Industry factors are external effects that define the relatively stable context in which competition between firms occurs along dimensions such as product differences, number and size of firms, supplier and customer behavior, and entry and exit barriers (Bain, 1972; Porter, 1981; Wirth & Bloch, 1995). These factors increasingly need to be regarded – other than the environmental factors – with an international perspective, since only few industries are purely national today.

The importance of industry analysis for formulating business strategies is not new, having a long history in strategic management research fields. Edward Chamberlin (1929) and Robinson (1933) initiated this outside view at the beginning of the 1900s; Edward Mason (1939) and his student Bain (1956) continued this focus by establishing the structure-conduct-performance framework. However, it was Porter (1975, 1976, 1979) who brought this to international prominence, took MNEs into account, and coined the term "market-based view" in the 1970s. All this happened prior to the scholarly focus on internal company factors, led by Birger Wernerfelt's (1984) and Ray Barney's (1991) "resource-based view". Similarly, the importance of industry factors is widely recognized in the INV setting as they determine the strategic choice set for, and influence the process and activities of, a start-up's internationalization (Andersson, 2004; Andersson et al., 2014; Evers et al., 2015; Oviatt & McDougall, 1994). Furthermore, industry factors also influence a start-up's internationalization speed and expected performance (Oviatt & McDougall, 2005).

For this thesis, I focus on two important industry factors that influence a start-up's internationalization speed and expected performance: the internationalization degree of the industry and the competitive landscape. Given their importance, the influence of these factors has been repeatedly highlighted in INV literature (Aspelund, Madsen, & Moen, 2007; McDougall, Oviatt, & Shrader, 2003). Another important industry factor often referred to in the literature is the start-up's domestic market, especially when having a small market size and low customer adaption rates (Evangelista, 2005; Spence, Orser, & Riding, 2011). However, most early internationalizing new ventures, arise from similar domestic markets such as the U.S., China, the U.K. or Germany that do not necessarily push start-ups outside their boarders. Therefore, this industry factor will not be dealt with in this thesis.

*Internationalization degree of the industry*

The internationalization degree of the industry represents the need for firms and start-ups in a specific industry to have international activities for developing key success factors that are crucial for success, such as resources or network effects. It is argued that the internationalization degree impacts the internationalization of start-ups allowing for competitive advantages in homogenous industries (Jolly, Alahuhta, & Jeannet, 1992). Additionally, the differences regarding the num-

ber of customers, number of product outputs or number of input items, when comparing the low and high internationalization degrees within an industry, leads to differences in economies of scale, industry niche focus, or network compilation of partners and suppliers (Coviello & Munro, 1995; Johnson, 2004; Ray, 1989; Robinson & Phillips McDougall, 2001). Moreover, the internationalization degree of the industry also directly influences new venture internationalization due to the mimetic behavior shown by firms and start-ups in high-uncertainty situations (Fernhaber et al., 2007).

*Competitive landscape*

The competitive landscape describes the intensity, fragmentation and differentiation of all the competitors within an industry. The competition not only influences the internationalization of start-ups but is also a motivating factor for international new ventures, according to Oviatt and McDougall (2005). Competition, however, has ambiguous effects on decisions regarding a start-up's international expansion. While competition may provide motivation, worldwide competition forces internationalizing start-ups to respond to much more competitive developments (Johnson, 2004). At the same time, competition serves as an orientation principle, not only for the already described mimetic behavior (Fernhaber et al., 2007) but also for industry best practices, product roadmaps and go-to-market strategies. Lastly, competitive intensity shows a mixed moderating effect on the development and the importance of key capabilities of start-ups such as marketing when internationalizing (Martin & Javalgi, 2016).

### 3.1.3. Start-up characteristics

Start-up characteristics are internal factors that, taken together, define the start-up; such as the founders and employees, the vision and business strategy, the product characteristics and employed technology, the resources and capabilities, the organizational structure, the business model, and the received funding (Cannone & Ughetto, 2014; Gerschewski et al., 2015; Naldi et al., 2020; Nowiński & Rialp, 2013; Oviatt & McDougall, 2005). Other than environmental and industry factors, start-up characteristics (as the name suggests) are not external influences that affect several new ventures, but rather internal influences that have firm-specific effects.

In light of the previous discussion of the market- and resource-based views when describing industry factors, the latter shows how influential firm characteristics are start-up performance. While the research field, beginning with Wernerfelt (1984) and Barney (1991), had focused attention on corporate and business strategy, INV scholars extended the research by applying the resource-based view to internationalization of start-ups. Much of this research examines the founders of international new ventures, their experience, network ties, and vision because the founders are arguably the most influential factor in a start-up's internationalization (Johnson, 2004; Oviatt & McDougall, 2005). Pinkwart and Proksch (2014), among others, complemented the research

by exploring the importance of general human capital on INV performance, while also considering technological and financial capital. Additionally, the importance of business strategies when combining capital resources with the founders' plans became a more prominent focus in seeking to explain INV performance (Mudambi & Zahra, 2018), as did product characteristics and differentiation from competition (Baum et al., 2011).

In this thesis, I focus on three important start-up characteristics that influence a start-up's internationalization speed and expected performance. For this, I follow the approach of Zucchella et al. (2007) and Sapienza, Autio, George, and Zahra (2006), who claim that the founders' characteristics, the start-up's business strategy, and its resource are the crucial internal start-up characteristics for early internationalization.

*Founders' characteristics*

The founders' characteristics are their prior work experience, international knowledge and orientation, their skill set, the makeup of the founding team, and their networks. Certain characteristics enable founders to recognize international opportunities (Zahra, 2005) and therefore actively shape the development of international new ventures in a way only they can see. In addition, past experiences of founders such as spending one's teenage years abroad or working abroad in MNEs allows them to identify, gather, and connect resources across borders (McDougall et al., 1994). Furthermore, the founders' general knowledge about business functions, industries, and technology shapes the design of their start-ups' international activities (McDougall et al., 2003). Loane and Bell (2006) suggest that the founders' characteristics, if unique, have the potential to be a highly valuable source of sustainable competitive advantage.

*Business strategy*

The business strategy of a start-up can consist of numerous strategic guidelines and be complemented by a start-up's purpose, vision and mission, or even by pre-set objectives. Porter' (1980) provided a classification system, consisting of three generic strategies: differentiation leadership, cost leadership and nice focus. These three strategies impact outcomes such as INV internationalization scope, scale, foreign sales, and ultimately international performance (Baum et al., 2011). Moreover, the adopted business strategies influence subsequent *Strategic Moves* such as entry modes (Czinkota, Grossman, Javalgi, & Nugent, 2009). It has also been shown that business strategies directly impact expected export performance (Falahat & Migin, 2017) and the general internationalization performance (Cavusgil & Knight, 2009) of INV in certain industries.

*Resources*

A start-up's resources consist of the financial, material, human, organizational, knowledge capital, and – considered collectively – the combination and exploitation of these forms of capital into capabilities and competences. While the founder team as a crucial asset within the human capital category has been already addressed, the resources in this dimension focus on the other resources. In INV literature, much focus has been placed on the knowledge, learning, and orientation side of human capital that allows start-ups to absorb information from abroad and include this in marketing or product development to influence INV's international performance (Evers, Andersson, & Hannibal, 2012; Prashantham & Young, 2011; Zahra, 2005). This emphasis arises from the perspective of resource-based view findings that financial and material capital rarely are sources of sustained competitive advantage due to their imitability and low rarity, while human, knowledge, and organizational capital are (Crook, Ketchen Jr, Combs, & Todd, 2008) due to the imitation barriers they hold (Dierickx & Cool, 1989).

### 3.2. Strategic moves

The *Strategic Moves* of start-ups consist of the activities executed to expand internationally. According to existing MNE literature (and some INV literature, since this research field is not mature yet), *Strategic Moves* most often consist of three types of activities: international expansion planning activities, market entry activities, and global management activities (Cavusgil, 1984; Daszkiewicz & Wach, 2012; Erramilli, Srivastava, & Kim, 1999; Kutschker & Bäurle, 1997; Melin, 1992; Neubert, 2017, 2018).

Unlike the *Heritage* aspects of a start-up, the *Strategic Moves* are actively selected decisions and guidelines that shape the internationalization endeavors. Collectively, these factors are the start-up's strategic steps beginning at the pre-set position determined by a start-up's *Heritage*. In the following sections, I will deduct hypotheses for the *Strategic Moves* to be tested in the study described in Chapter 4. An overview of the hypotheses will be presented in Figure 3 at the beginning of Chapter 4.

### 3.2.1. International expansion planning activities

International expansion planning activities include all organizational and individual strategic planning structures and processes a start-up executes to determine the internationalization strategy. As for general strategy development, the activities for internationalization planning can include the organizational set-up, timeline, team composition and involved stakeholders, the steering and decision-making process, criteria for decision making, communication guidelines, the interaction modes, and the content scope (Feurer & Chaharbaghi, 1995; Hodgkinson, Whittington, Johnson, & Schwarz, 2006; Idenburg, 1993).

It is crucial to consider international expansion planning activities because strategic planning has the potential to positively or negatively affect the resulting strategy (Akinyele & Fasogbon, 2010; Mintzberg, 1994a, 1994b; Shoham, 1996). More specifically, aspects such as the autonomy of the planning group (Andersen, 2000), the appropriate distribution of

responsibility (Uvah, 2005), and the top-down planning by the management team potentially with external consulting support (Babafemi, 2015) influence the effect that the international expansion planning activities have on corporate and international performance.

In this thesis and the survey, I focus on four aspects of international expansion planning activities based on their importance in strategic planning and international business literature (Ghemawat, 2001; Mintzberg, 1994a; Welch & Welch, 1996). These aspects are the organizational set-up in which the internationalization is planned, the main owner and responsible positions of the internationalization activities, the main reason for expanding internationally, and the criteria taken into consideration when choosing the geographical market in which to internationalize.

*Organizational set-up*

The organizational set-up in which the internationalization is planned describes the characteristics of the strategic planning group. In the literature, the set-up most often takes the form of a timely limited task force, ongoing work existing departments, the creating of a new department and, outsourcing as a consulting project (Jang & Lee, 1998; Kaplan & Norton, 2008; Y.-G. Kim, Yu, & Lee, 2003; Lawrence & Lorsch, 1967; Tarique, Briscoe, & Schuler, 2015). Prior research suggests that planning a one-time occurring strategic step that has high complexity and urgency, such as the first wave of internationalization, is best done within a dedicated task force (Bortal, 2015; Dobbin & Kalev, 2015; John, Young, & Miller, 1999). This is because cross-departmental task forces combine problem-solving skills from diverse backgrounds with decentralized decision-making (John et al., 1999) and its members can advocate for and implement the results in their departments (Dobbin & Kalev, 2015). Furthermore, research shows that highly complex, and at the same time important, strategic developments are ideally supported by external advisors and consulting projects because this leads to increased firm performance (Back, Parboteeah, & Nam, 2014; Cerruti, Tavoletti, & Grieco, 2019; C. Wright & Kitay, 2002). Accordingly, my first two hypotheses are stated as follows:

> **H1.** Planning internationalization activities as a task force positively affects the internationalization performance of a start-up.

> **H2.** Adding external support from consultants to plan internationalization activities for positively affects the internationalization performance of a start-up.

*Ownership and responsibility*

The main owners and responsible positions of the internationalization activities indicate who in a start-up oversees and is held accountable for the formulation of the internationalization plan. Ownership can be attributed to all levels of an organization, ranging from the founders, the C-level and the Chief Executive Officer (CEO), to the Chief of Staff or Head of Strategy, to middle management, which are the Heads of operational departments such as Sales, Operations, or Product. It is generally acknowledged that strategic planning is more successful if it receives C-level attention and involvement and might even fail if it does not (Basu, Hartono, Lederer, & Sethi, 2002; Mintzberg, 1994b; Ocasio & Joseph, 2008). This is the case because top-management contributes with high quality human capital to the planning and decision-making process (Al Shobaki, Abu Amuna, & Abu-Naser, 2016) and is the only employee group capable of streamlining the organization's action going forward and ensuring staff commitment (Ocasio & Joseph, 2008). This is also the case when planning international activities (Dymsza, 1984). However, the influence of middle management on strategic planning and its importance on implementation is also generally recognized in the strategy literature (Balogun & Johnson, 2004; Wolf & Floyd, 2017). My third hypothesis, therefore, states:

> **H3.** Top management ownership (founders and C-level positions) of the internationalization planning positively affects the internationalization performance of a start-up.

*Reason for internationalization*

After setting up the planning team and assigning responsibility, internationalization planning reaches the main reason for expanding internationally – that is – the primary objective it wants to achieve. Defining objectives prior to planning internationalization steps is crucial because they impact the appropriate selection of subsequent steps (Ghoshal, 1987). Additionally, objectives offer guidance, and the monitoring of objectives allows for continuous improvement when further internationalizing (Knight, 2001). According to Dunning and Lundan (2008) and Dunning (2009), the four most common objectives for internationalization endeavors are *market share gains*, *resource gains*, *strategic assets gains* and *efficiency gains*. *Market share gains* are the increase in international market share and meeting unmet demand in foreign countries and greenfield markets. *Resource gains* are the access to operations-critical resources such as rare materials. *Strategic assets gains* are the access to competitive advantage-critical resources such as networks, production sites, and proprietary knowledge. *Efficiency gains* are the exploitation of cost-efficient input factors such as cheap labor or better transportation infrastructure. These objectives most often occur in combination and change over time (Schmid & Grosche, 2008). However, in this thesis, I focus on the single most important objective that is chosen for the very first wave of international expansion. International management research shows that market share seeking is the

objective most frequently used by start-ups from developed countries (Luo & Park, 2001). Start-ups from developing countries tend use, in line with the Springboard theory, the strategic assets seeking objective, thus seeking to close the competitive advantage gap with their competitors from developed countries (Luo & Tung, 2007). Focusing on start-ups from developed countries in this thesis and survey, my fourth hypothesis is formulated as follows:

**H4.** Having a market share seeking objective positively affects the internationalization performance of a start-up.

*Market analysis criteria*

The criteria taken into account when choosing the geographical market in which to internationalize demonstrate what start-ups emphasize most when making this decision. Ghemawat (2001) differentiated between *economic characteristics* of a host market (such as market size and growth) and the *psychological distance* (sometime referred to as psychic distance by Johanson and Vahlne (1977)) between the home and host market. According to Ghemawat's (2001) CAGE framework, the psychological distance consist of the *cultural*, *administrative*, *geographical*, and *economic* distance between the countries. *Cultural* distance consists of differences in language, race, religion, and social norms. *Administrative* distance, also called political distance, describes institutional differences, trade connections, and historical togetherness. *Geographical* distance is the spatial distance between countries and differences in topology. Finally, *economic* distance is the difference in wealth and wealth distribution, subsidies, and economic system. While Ghemawat (2001) states that industries differ in their sensitivities to psychological distance, he claims that it is crucial for start-ups in all industries to take this into account when assessing how attractive a geographical market is to enter. By contrast, the INV literature takes a different perspective. Studies show either a mixed effect of psychological distance on internationalization performance (J. K.-U. Brock, Johnson, & Zhou, 2011; Ojala, 2015) or the studies fail to address the importance of psychological distance on geographical market selection on the basis of few born globals that internationalize towards multiple countries with high psychological distance (Burgel & Murray, 2000; Oviatt & McDougall, 1997). This is because the psychological distance has only a negative effect on the internationalization of born globals due to their unique characteristics that allow them to instantly expand globally (Przybylska, 2013). For early internationalizing start-ups, however, the inclusion of the psychological distance is necessary (Ojala & Tyrväinen, 2009). But the inclusion of this factors has its limits; if it is the only dimensions considered, it can present an incomplete picture of host market attractivity that needs to be complemented by economic factors (Ghemawat, 2001). On this basis, my fifth hypothesis is stated as follows:

**H5.** There is an inverted U-shaped relationship

between the degree of inclusion of psychological distance factors in geographical host market selection for international expansion and the internationalization performance of a start-up.

3.2.2. Market entry activities

A start-up's market entry is the next step after planning the internationalization and choosing geographical markets to enter. Additionally, this is a crucial phase to analyze because it is just as complex as it is important for the internationalization performance (Agarwal & Ramaswami, 1992). Moreover, it is argued that market entry moves are widely influenced by a start-up's *Heritage* and vary greatly depending on the characteristics and peculiarities of the geographical market to enter (Ellis, 2000; Madhok, 1997). For international new ventures, market entry decisions are crucial because multiple resource constraints narrow the options to choose from while the decisions arguably affect the performance of INVs more than MNEs (Ripollés & Blesa, 2017; Ripollés et al., 2012).

According to Pan and Tse (2000), and Buckley and Casson (1998) the market entry consists of three main aspects: the operating mode, the entry type, and the internationalization path. Since this is the case for MNEs as well as for start-ups, I will focus in this thesis on these three aspects.

*Operating mode*

The operating mode defines the organizational set-up with which a mature company or start-up establishes its foreign operations in a new geographical market. In international management literature, different ways of categorizing operating modes have been formulated based on different criteria (Andersen, 1997; Benito et al., 2009; Malhotra, Agarwal, & Ulgado, 2003). Most studies agree that the distinction is based on the ownership of foreign assets, distinguishing between *equity operating modes* and *non-equity operating modes* (Santangelo & Meyer, 2017). *Equity operating modes* involve exporting that is self-handled, wholly owned subsidiaries that stand alone or are part of joint-ventures or alliances, sales branches, and production sites; all under the ownership of the start-up (Grøgaard & Verbeke, 2012). *Non-equity operating modes* involve exporting that is outsourced, franchising, licensing, and contract manufacturing; all based on market contracts with affiliated partners (Erramilli, Agarwal, & Dev, 2002). While equity modes are more expensive, riskier, and more complex to establish, they do allow for a higher degree of control (Kraus, Ambos, Eggers, & Cesinger, 2015). Non-equity modes on the other hand are asset-light, cheaper, and faster to establish; however, they do not allow for tight control and fast resolution of conflicts because they are based on contractual arrangements (Zacharakis, 1997). The operating mode decision is most commonly based on Coase's (1937) transaction cost theory stating that having selected business activities in one's value chain or sourcing it from the free market depends on the associated costs of the transactions involved. Leaving MNE behavior aside and

focusing on international new ventures, the literature shows that start-ups are making use of almost all operating modes available (Sasi & Arenius, 2008). INVs choose their operating modes, on the one hand, based on resource availability and, on the other hand, on foreign product and industry-specific geographical requirements as well as host country circumstances (Burgel & Murray, 2000; Gleason & Wiggenhorn, 2007; Melén & Nordman, 2009). Due to the fact that different operating modes have quite different implications for foreign operations governance, the ideal choice depends on the industry and product of a start-up and often combinations of operating modes are chosen for market entries. Previous international business and INV literature does not support the unequivocal dominance of one operating mode over the others (Brouthers, 2002; Welch, Benito, & Petersen, 2018).

However, operating modes that align with the transaction cost theory implications perform best for MNEs and small and mid-sized enterprises (SMEs; Brouthers & Nakos, 2004). This suggests that start-ups that need tight control of business activities and product adaptions, as well as quick resolution, should opt for equity modes. In contrast, start-ups that need loose control, little adaptation, and no quick resolutions should opt for non-equity modes. Neglecting the conditional implications of the transaction costs theory, the research shows that equity operating modes should generally lead to higher international performance. This is due to the better market, customer, competitor, supplier and network interaction and understanding (Pan & Tse, 2000; Yeoh, 2004; Zahra et al., 2000), which are important in an international new venture setting. Hollender, Zapkau, and Schwens (2017) attempted to test empirically that equity operating modes are generally superior to non-equity operating modes by collecting data from SMEs, but they identified no significant relationship. Derived from this, hypotheses six is stated as follows:

> **H6.** Entering host markets with equity operating modes positively affect the internationalization performance of a start-up.

*Entry type*

The entry type of a start-up's foreign market entry describes the source of the assets and entity of FDI (Dunning, 1994). Within international business studies, the spectrum of entry types varies from pure *greenfield investment* and mixed types such as *international joint-ventures* (*IJV*) and *alliances* to pure *acquisition* of foreign assets and brands (Dikova & Brouthers, 2016; Dikova & Van Witteloostuijn, 2007). *Greenfield investment* is the self-building of a start-up's foreign operations from scratch (Hymer, 1960). *IJVs* and *alliances* are two types of companies joining forces. In IJV most often two companies formally collaborate and create a new entity consisting of half-and-half distributed resources from both companies. Typically, the internationalizing company contributes

technological and product-specific capabilities, and the foreign company contributes go-to-market capabilities (Chen, Park, & Newburry, 2009). Alliances are less-binding consortia of multiple companies offering best practice sharing and no mandatory support (Glaister & Buckley, 1998). *Acquisitions* are buy-outs of certain company assets and brands, complete national operations of a company, or a whole company itself (Rugman, 1980).

Considering the entry type when entering a foreign market is vital because it does not only depend on *Heritage* antecedents such as a firm's multinational diversity, the Research & Development (R&D) intensity of the product, or the cultural distance between home and host country (Barkema & Vermeulen, 1998; Kogut & Singh, 1988; Morschett, Schramm-Klein, & Swoboda, 2010). It is also important because it influences the foreign market strategy choices, the international performance, and the survival rate of the foreign operations of MNEs and start-ups (Harzing, 2002; Mudambi & Zahra, 2018). Entry types have a high impact on strategic choices about knowledge transfer and capabilities development because it requires the least amount of effort to transfer knowledge to greenfield investments; acquisitions, however, bring in new capabilities but require additional governance structures (Hennart & Park, 1993). Furthermore, entry types influence entry costs, speed, and the resulting competitive landscape shape within the industry which in turn influence subsequent go-to-market decisions (Görg, 2000). According to Woodcock, Beamish and Makino's (1994) research on MNEs, greenfield investment generally tends to outperform IJVs, which, in turn, tend to outperform acquisitions. This proposition is additionally supported by Li (1995). By contrast, Müller (2007) found that greenfield investments are best when there is little competition in the host market while acquisitions are best when competition is fierce. Lastly, Raff, Ryan, and Stähler (2009) argued that the choices between acquisitions and IJVs depend heavily on the profitability implications from the potential greenfield investment lowering the acquisition price and enhancing the willingness of foreign firms to enter into an IJV agreement. Hypotheses seven and eight, therefore, state the following:

> **H7.** Greenfield investment as entry type in host markets positively affects the internationalization performance of a start-up.

> **H8.** Acquisition of foreign operations as entry type in host markets negatively affects the internationalization performance of a start-up.

*Internationalization path*

The internationalization path is the process and subsequent development of successive market entries into different host markets for internationalizing firms. This research field is likely the most investigated one in respect to INVs. Johanson and Vahlne (1977) introduced the concept of the interna-

tionalization process of the firm – most often called the Uppsala model or the stage theory. This theory postulates that domestic firms typically evolve toward MNEs by slowly starting to expand internationally to neighboring countries with little psychological distance. These first internationalization steps are typically executed with low-risk operating modes such as exporting or sales branches that do not need high investments. Only with increasing international experience do companies accelerate their internationalization to countries on other continents or with high-risk operating modes such as wholly owned subsidiaries.

McDougall et al. (1994) first challenged the internationalization process theory when introducing the INV and born-global concept. Research has suggested that INVs have a special matrix of capabilities such that they would not face high liabilities of foreignness or outsidership when internationalizing toward countries with high psychological distances (Oviatt & McDougall, 1997). Therefore, INV research suggests that the staged Uppsala model does not explain the concept of fast internationalization of INVs (Freeman, Hutchings, Lazaris, & Zyngier, 2010; Welch & Luostarinen, 1988).

It is crucial to investigate the internationalization path of a start-up because it is highly influenced by industry-specific and firm-specific aspects and by the perception of a start-up's decision-makers (Andersson et al., 2014). Additionally, the internationalization process has implications not only for the overall international performance but also for the company's learning, culture, and networks (Coviello, 2006; Trudgen & Freeman, 2014). The latest research shows that the internationalization process of INVs is indeed, as described earlier, faster and less systematic than proposed by the stage model of MNEs (Pellegrino & McNaughton, 2015). However, only a small fragment of early internationalizing start-ups are born globals and have the industry- and firm-specific circumstances to internationalize globally at inception, while most start-ups internationalize in the years after the first one, following a more MNE-similar approach (Hewerdine & Welch, 2013). For these reasons, hypothesis nine is stated as follows:

> **H9.** There is an inverted U-shaped relationship between the internationalization path (internationalizing into one neighboring country versus internationalizing simultaneously into multiple countries on one continent versus internationalizing into multiple countries on multiple continents) and the internationalization performance of a start-up.

### 3.2.3. Global management activities

The *Strategic Moves* of a start-up's global management ensure that all foreign operations are optimally designed and coordinated. In past MNE literature, different aspects of global management have been researched including resource coordination, headquarter (HQ) to foreign subsidiary relationship and subsidiary role, social capital building, consideration of national institutions, culture management, local

adaption of business activities, products and services, and international human resource management (Briscoe, Schuler, & Tarique, 2012; D. M. Brock & Barry, 2003; Edwards & Kuruvilla, 2005; Ghoshal, Bartlett, & Moran, 1999; Gooderham, 2007; Regnér & Edman, 2014; Rowden, 2002; Yip, 1989). These aspects have been investigated because global management plays an important role when expanding internationally, influencing the holistic strategic and financial performance of a firm (Zou & Cavusgil, 1996) and affecting foreign operations and capability development (Kanter & Dretler, 1998; Prange & Verdier, 2011).

Within this thesis, a start-up's global management consists of five main components. These components, seen as the most important ones in international business research (Gooderham et al., 2019; Kostova et al., 2016), are the roles of subsidiaries, the start-up's international strategy, the integration and local responsiveness levels of value chain operations, the local adaptation of the product, and the knowledge transfer.

*Subsidiary role*

The subsidiary role is the status a foreign subsidiary has within the global organization of a firm. According to Bartlett and Ghoshal (1989), the role of subsidiaries can be assessed across two dimensions: the strategic importance of the geographical market where the subsidiary is located and the level of local resources and capabilities attributed to the foreign subsidiary by the corporate center. When both dimensions are high, the subsidiary is a *strategic leader*, having high autonomy and the mandate to build competitive advantages. When both are low, the subsidiary is an *implementer* responsible for keeping up the current position. When the importance of the market is low but the local resources are high, the subsidiary is a *contributor* mandated to support other foreign subsidiaries. When the importance of the market is high but the local resources are low, the subsidiary is a *black hole*, most often a starter that needs investment to reach competitive advantages in the market. Finding the appropriate role for foreign subsidiaries is complex because this is affected by the subsidiary's performance, its embeddedness in the host country, and the corporate's global coordination approach (Geppert & Williams, 2006). Furthermore, roles need to be continually adjusted to meet global political and economic changes (Bartlett & Ghoshal, 1993; Nohria & Ghoshal, 1997). Additionally, attributing the appropriate role to foreign subsidiaries allows for the ideal development of the subsidiary itself and maximizes contribution toward international corporate goals (Birkinshaw, Hood, & Jonsson, 1998). Luo (2003) shows that wider resource transfer towards the foreign subsidiary enhances international performance. Additionally, start-ups place their first subsidiaries, as discussed, in strategically important markets (Andersson et al., 2014). This results in the tenth hypothesis as follows:

> **H10.** Attributing the role of a strategic leader to the first foreign subsidiaries positively affects the

internationalization performance of a start-up.

*International strategy*

The international strategy of a start-up is its strategic direction regarding coordination, integration, and local adaptation of all business activities within the HQ and all foreign branches and subsidiaries. Gooderham et al. (2019) consolidated past research strings regarding different international strategies and arranged them across two dimensions: the degree of integration of business activities between subsidiaries and the degree of local adaptation of foreign business activities and products. When both dimensions have a low degree, this is referred to as *simple international strategy* (*none-dimensional international strategy*) which is often a starting model for a firm's internationalization activities or for an international firm that is not able to create synergies. When only the degree of integration is high, this results in the *global strategy* (*one-dimensional international strategy*). This strategy allows tight control over subsidiaries regarding culture and quality control and can create cost synergies due to economies of scales in production of standardized products (Kogut, 1989). When only the degree of local adaptation is high, this results in the *multidomestic strategy* (*one-dimensional international strategy*). This strategy equips foreign subsidiaries with high autonomy so that they can alter product and business activities to specific local conditions and demands so as to enhance product-market-fit and willingness to pay (Hout, Porter, & Rudden, 1982; Yip, 1989). When both dimensions are high, this is referred to as *transnational strategy* (*two-dimensional international strategy*). This strategy combines the high integration of subsidiaries with the high autonomy they possess, simultaneously enhancing synergy potential and complexity (Bartlett, Ghoshal, & Birkinshaw, 2000). Following the *transnational strategy*, MNEs and INVs increasingly try to ensure the appropriate standardization of certain processes, allowing others to be altered based on the host country's needs while at the same time exploiting foreign technology clusters for enhanced innovation (Bartlett & Ghoshal, 1995).

Setting up the appropriate international strategy when starting to design the global management of a firm is vital (Birkinshaw, Morrison, & Hulland, 1995; Ricart, Enright, Ghemawat, Hart, & Khanna, 2004). Furthermore, a firm's international strategy is important because it gives superordinate guidance to creating capabilities and competitive advantages through internationalization (Hitt et al., 2016). However, the literature suggests that due to its very high complexity, the *transnational strategy* has been observed only rarely in its pure form (Bartlett & Ghoshal, 2002) and is rather an unachievable ideal state (Gooderham et al., 2019). INV literature states that internationalizing start-up, although well-funded, often still have capital restrictions and flexibility challenges (Sleuwaegen & Onkelinx, 2014) and need efficient cost amortization of business plans (Burgel & Murray, 2000). This hampers the early focus on enhanc-

ing global integration and local adaptation simultaneously. Thus, hypothesis eleven states the following:

> **H11.** There is an inverted U-shaped relationship between the international strategy (no-dimensional international strategy versus one-dimensional international strategy versus two-dimensional international strategy) and the internationalization performance of a start-up.

*Integration and local responsiveness of value chain activities*

The integration and local responsiveness levels of value chain operations represent a more granular level of the international strategy of a start-up. While the international strategy defines the direction the corporate level takes as orientation, the value chain operations' integration and local responsiveness level can vary within the same international strategy from firm to firm. According to the entrepreneurship literature, the most important activities for mature companies and start-ups are research and development, product development, human resource management, culture management, purchasing, production, marketing, sales, and customer service, which is sometimes referred to as customer success (Kaplinsky & Morris, 2000; Porter, 2001; Shin, Kraemer, & Dedrick, 2009). Start-ups need to correctly configure these two dimensions of value chain activities because they are highly influenced by a start-up's industry characteristics and customer preferences (Berchtold, Pircher, & Stadler, 2010). Additionally, they influence international performance by shaping firm costs and the willingness-to-pay of customers (Steenkamp & Geyskens, 2014). While the most appropriate degrees of integration or local responsiveness may be subject to antecedents already discussed, each value chain activity shows different tendencies based on its nature. Activities that require high knowledge transfer of firm processes and are not directly influenced by customer needs because they are internal – most often R&D, product development, purchasing and production – are more likely to enhance international firm performance if they have a low degree of local responsiveness and a high degree of global integration (Kobrin, 1991; Sachs, Warner, Åslund, & Fischer, 1995). I will address them as *internal activities*. On the other hand, activities that are customer-related – most often marketing, sales, and customer service – are more likely to enhance international firm performance if they have a high degree of local responsiveness and a low degree of global integration (Petersen & Pedersen, 2002). I will address them as *external activities*. Finally, there are value chain activities that have not predispositions based on their nature: human resource management and culture management. Applying these findings from MNE literature to start-ups, hypotheses 12 and 13 propose the following:

> **H12.** Global integration of internal activities (R&D, product development, purchasing, and

production) positively affects the international-
ization performance of a start-up.

**H13.** Local responsiveness of external activ-
ities (marketing, sales, and customer service)
positively affects the internationalization perfor-
mance of a start-up.

*Product adaptation*

After having considered the global integration and local
adaptation dimensions of the overall strategy and the value
chain activities, the local adaptation of the product and
service of a start-up is investigated. Local adaptation of a
product describes the degree to which a product and service
is altered to have an ideal product-market fit with the host
country's market. Most commonly, in business-to-consumer
(B2C) contexts, consumer goods such as food products and
clothing are adjusted to national and regional preferences.
More rarely, also in business-to-business (B2B) contexts,
company software products and production materials could
potentially be adjusted toward geographical preferences ac-
cording to production needs or integration with other locally
used software. However, product adaptation does not only
potentially increase customer demand in host markets but it
also bears higher costs for product development, production,
marketing, sales, and customer service (Calantone, Cavusgil,
Schmidt, & Shin, 2004). Hence, it is strategically important
to choose the appropriate level of product adaptation that
enhances customer demand to a higher degree than the as-
sociated costs so as to positively impact international perfor-
mance. When evaluating the impact of product adaptation,
Calantone et al. (2004) and Calantone, Kim, Schmidt, and
Cavusgil (2006) found that for MNEs, higher product adap-
tation results in higher international performance when the
product is exported and when it is sold in the host country.
For INVs, Gabrielsson, Gabrielsson, and Dimitratos (2014)
also suggest that significant product adaptation was neces-
sary for high international performance of the start-ups they
analyzed. Therefore, the fourteenth hypothesis states the
following:

**H14.** Product adaptation positively affects the
internationalization performance of a start-up.

*Knowledge transfer*

The last *Strategic Move* to consider is the knowledge
transfer within international start-ups. Knowledge transfer
activities are practices that collectively aim to build up social
capital within an organization in order to enable and ease
the formal and informal cross-border transfer of information,
data, and processes (Roberts, 2000). Transferring knowledge
from HQ to subsidiaries and in-between subsidiaries is crit-
ical to reach a global level of competitive advantages and

capabilities (Morris, Zhong, & Makhija, 2015). This is partic-
ularly the case because capabilities are increasingly created
outside the HQ, making knowledge transfer more directional
and more complex (Kuemmerle, 1997). Or as Pedersen, Pe-
tersen, and Sharma (2003, p. 87) put it, "knowledge within
the multinational organization is neither frictionless nor
futile and requires a great deal of managerial discretion."
Knowledge transfer has primary importance for all value
chain activities that need a high degree of global integration
(Berry, 2014; Hoekman & Javorcik, 2006; Smale, 2008) and,
furthermore, positively affects locally responsive value chain
activities by facilitating head starts in the adaptation pro-
cesses (Saliola & Zanfei, 2009; Szulanski & Jensen, 2006).
The organizational knowledge that needs to be transferred
across national boundaries most often is categorized as *in-
dividual* or *social* and as *explicit* or *implicit* (Spender, 1994).
While the implications of knowledge transfer activities are
similar for all types of organizational knowledge, it is agreed
that implicit social knowledge – for instance, the firm's cul-
ture – is the most difficult to transfer (Spender, 1996). Good-
erham (2007) developed the dynamic capabilities-driven
model of determinants of knowledge transfer that identified
*management-initiated practices* such as the core elements of
international knowledge transfer. These practices can be
*transmission channels* such as international committees, liai-
son personnel, or common intranet; *socialization mechanisms*
such as diversity training, language training and job trans-
fers between countries; and *motivational mechanisms* such as
extrinsic and intrinsic rewards. Previous international man-
agement literature shows that intensive knowledge transfer
activities positively affect subsidiary performance and, there-
fore, international performance in general independent of
individual transfer activities (Kotabe, Dunlap-Hinkler, Par-
ente, & Mishra, 2007; Levine & Prietula, 2012; Wang, Tong,
Chen, & Kim, 2009). In line with these findings, the fifteenth
hypothesis suggests the following:

**H15.** Knowledge transfer positively affects the
internationalization performance of a start-up.

*The effect of the relative product quality*

Although not accounted for in Figure 2, according to ex-
isting literature, there is a moderating effect of the product
quality on the relationship between the *Strategic Moves* and
the internationalization performance of early international-
izing start-ups. The quality of a firm's product is associ-
ated with superior international performance as shown by
Audretsch, Lehmann, and Schenkenhofer (2018) in the case
of German hidden champions. For new ventures, successful
INVs focused on high product and service quality and high
product innovation versus national new ventures (McDougall
et al., 2003). Therefore, the sixteenth and final hypothesis
claims the following:

**H16.** The relative quality of a start-up's products
positively influences the relationships between

the *Strategic Moves* (H1-H15) and the internationalization performance of a start-up.

## 4. Methodology

To provide empirical support for the conceptual model proposed in Chapter 3, I conduct a literature review and a field survey. The literature review based on secondary data of INV research defines the role of a start-up's *Heritage*. The multi-industry field survey that collected primary data from internationalizing start-ups tests the stated hypotheses on the *Strategic Moves*, as summarized in Figure 3. Figure 3 gives an overview of the derived hypotheses in Chapter 3.2 and shows how the *Strategic Moves* of the conceptual model are investigated and which effects are expected to be found as results of the analyses.

In this chapter, I present the methodology of the quantitative study used for the hypotheses summarized in Figure 3. This includes the data collection and sample properties. The chapter also discusses the construction of the measures and the determination of the variables. Lastly, it includes the analysis approach.

### 4.1. Data collection and sample

I collected data from 56 start-ups. 24 had already internationalized their business, 12 were in the process of internationalizing when participating, and 15 planned to internationalize in the future. 5 start-ups did not intend to internationalize in the future.

The digital questionnaire for the field study was distributed via direct mailing to 205 European start-ups and via cooperation with German universities (e.g., Ruhr-Universität Bochum, TU Dortmund, RWTH Aachen and TU München), start-up networks in Germany (e.g., WorldFactory and Ruhr:Hub), the Bundesverband Deutsche Startups, start-up groups on LinkedIn (e.g., Startup Germany Club and Market Your Start Up), and German Venture Capital firms (e.g., STS Ventures and Earlybird Venture Capital). The data collection took place between December 2021 and February 2022.

The cooperating organizations and I sent out the questionnaire-based survey mainly to founders, C-level employees, and head of strategy, business development, and international expansion departments. We did so because these positions are the most knowledgeable about the internationalization of their start-up (Baum et al., 2011), following the key informant approach (Homburg, Alavi, Rajab, & Wieseke, 2017). The total response rate is not possible to retrace due to the unknown number of start-ups the survey reached through the cooperating organizations. The response rate for the direct mailing is 10.7% (n = 22). Furthermore, 5 responses had to be eliminated because the start-ups did not aim to internationalize in the future. These start-ups only provided data on why they do not intend to internationalize. Therefore, 51 responses are used for the final data analysis.

The sample mainly consists of privately owned start-ups founded in Europe between 2006 and 2022. Since I focus

on the *Strategic Moves* of early internationalizing start-ups, I chose relatively young firms. This is reflected in 42 start-ups being founded in 2016 or later. Research shows that early internationalizing start-ups exist independently from industries (Knight & Cavusgil, 2004). Therefore, the industries represented by the start-ups in the survey are relatively equally distributed.

### 4.2. Measurement

For the questionnaire, I use previously validated measures from international business studies in combination with newly created measures based on conceptual models of prior research in strategic management, INV, and international business studies. Table 2 presents an overview of all variables.

*Independent variables*

To measure the independent variables stated in the hypotheses, I used single and multiple-choice constructs, and ten-point Likert-scales. The single- and multiple-choice constructs were used for the task force and consulting involvement, the top-management planning ownership, the market seeking objective, the equity operating mode, the greenfield and acquisition entry type, the internationalization path to multiple countries on one continent, the strategic leader subsidiary role, and the one-dimensional international strategy. The ten-point Likert-scales were used for the degree of inclusion of the psychological distance, the integration degree of the internal and responsiveness degrees of the external value chain activities, the degree of product adaptation and the degree of knowledge transfer activities. In the Likert scales, 1 represented "Low degree" and 10 represented "High degree".

For some independent variables, theoretical constructs from prior research or compilation of related research findings have been used. This is because research on the *Strategic Moves* of INVs is limited and does not offer strong methodological guidance. Accordingly, Dunning's (2009) four main reasons are used as a framework for the internationalization reasons. For the psychological distance, Ghemawat's (2001) CAGE-framework is used. For internationalization path, Johanson and Vahlne's (1977) Uppsala model was adjusted and used. For the subsidiary role, Bartlett and Ghoshal's (1989) four types are used. For the knowledge transfer, Gooderham's (2007) dynamic capabilities-driven model of determinants of knowledge transfer is used.

While most of the measures could be taken as variables, some had to be newly developed. All newly developed variables are results of clustered or summed up measures that are more granular. The C-level variable consists of the CEO, the Chief of Staff, and the remaining C-level management position. The psychological distance has been assembled from the cultural, geographic, and economic distance. For the equity operating mode, self-managed exporting, sales branches, production sites and subsidiaries have been taken together. The internationalization path of expanding initially

Note: + = positive relation, - = negative relation, ∩ = inverted U-shaped relation

**Figure 3:** Analysis Model of the Study.

**Table 1:** Study Sample Properties.

| Property | Firm home country | | Finn age (years) | | Funding received (m EUR) | |
|---|---|---|---|---|---|---|
| Occurence | Germany | n = 41 | < 1 | n = 2 | < 0.1 | n = 8 |
| | Rest of Europe | n = 10 | 1 - 3 | n = 21 | 0.1 - < 1 | n = 12 |
| | | | 4 - 6 | n = 19 | 1 - < 10 | n = 19 |
| | | | > 6 | n = 9 | 10 - < 100 | n = 10 |
| | | | | | > 100 | n = 2 |
| | **Number of employees** | | **Firm ownership** | | **Role of survey respondent** | |
| | < 10 | n = 21 | Private | n = 43 | Co-founder | n = 17 |
| | 10 - 50 | n = 14 | Corporate | n = 6 | CEO | n = 13 |
| | 51 - 200 | n = 13 | Other | n = 2 | Head of strategy dep. | n = 9 |
| | 201 - 1,000 | n = 1 | | | Member of strategy dep. | n = 17 |
| | > 1,000 | n = 2 | | | Other | n = 24 |
| | **Business model** | | **Industry** | | | |
| | Software as a Service | n = 24 | Business functions mgmt. | n = 10 | | |
| | Multi-sided platform | n = 7 | Consumer goods | n = 8 | | |
| | Marketplace | n = 6 | Industrial goods | n = 8 | | |
| | Manufacturing | n = 5 | Financial services | n = 3 | | |
| | Other | n = 9 | Other | n = 22 | | |

Note: Funding received indicates for all start-ups that have already internationalized how much funding these start-ups received before internationalizing and for all start-ups that are in the internationalization process or plan to internationalize in the future how much funding these start-ups received when filling out the survey; Multiple answers were possible for the role of survey respondet

**Table 2:** Overview and Description of the Study Variables.

| Variables | Description of variable | Literature construct | Source |
|---|---|---|---|
| Finn age | The number of years that passed since the creation of the start-up's legal form | - | McNaughton (2003); Naldi et al. (2020) |
| Relative product quality | The quality of the product in comparison to the quality of the competititors' products | - | McDougall et al. (2003) |
| Task-force usage | Using a task-force of employees for the internationalization planning | - | John et al. (1999) |
| Consulting support addition | Using external consultants for the internationalization planning | - | C. Wright and Kitay (2002) |
| C-level ownership | C-level members have the main responsibility for the internationalization planning and performance | - | Mintzberg (1994b); Ocasio and Joseph (2008) |
| Market seeking objective | Gaining higher market share is the main internationalization objective | Dunning's 4 internationalization reasons | Dunning (2009) |
| Inclusion of psychological distance in host market analyses | Psychological distance is included in the decision-making criteria when choosing a host market to internationalize to | The CAGE distance framework | Ghemawat (2001) |
| Equity operating mode | An equity operating mode is chosen when entering a host market | The hierarchical model of choice of entry modes | Pan and Tse (2000) |
| Greenfield entry approach | Market entry in host markets is done by building up foreign operations from scratch | The foreign direct investment mode choices | Brouthers and Brouthers (2000); Dikova and Van Witteloostuijn (2007) |
| Acquisition entry approach | Market entry in host markets is done by acquiring foreign operations from other firms | The foreign direct investment mode choices | Brouthers and Brouthers (2000); Dikova and Van Witteloostuijn (2007) |
| Initial internationalization path to multiple countries on the same continent | The first internationalization wave is towards multiple countries on the same continent | The Uppsala model | Johanson and Vahlne (1977) |
| Strategic leader subsidiary role | The role of the first subsidiaries is being strategic leaders | The 4 roles of subsidiaries | Bartlett and Ghoshal (1989) |
| One-dimensional international strategy | The international strategy focuses on one dimension, being either a global or a multidomestic strategy | The four international strategies | Gooderham et al. (2019) |
| Integration of internal activities | Internal activities are integrated between foreign operations | Firm value chain; Integration-adaptation continuum | Porter (2001); Berchtold et al. (2010) |
| Responsiveness of external activities | External activities are adapted to the host markets | Firm value chain; Integration-adaptation continuum | Porter (2001); Berchtold et al. (2010) |
| Product adaptation | The products are adapted to the host markets | - | Calantone et al. (2004, 2006) |
| Knowledge transfer | Knowledge transfer activities are used to transfer knowledge across foreign operations | The dynamic capabilities-driven model | Gooderham (2007) |
| Total internationalization performance | The total and overall internationalization performance | - | Stuart and Abetti (1987); Hult et al. (2008) |

into multiple countries on the same continent consists of the expansion to several neighboring countries on the same

continent and of expansion to many countries on the same continent. The one-dimensional international strategy vari-

able is a cluster of the multidomestic and the global strategy. The internal activities for the consideration of the integration degree are R&D, product development, production and purchasing. The external activities for the consideration of the local responsiveness degree are marketing, sales, and customer service. Additionally, although based on the dynamic capabilities-driven model of determinants of knowledge transfer, the knowledge transfer variable used is the average of the values of all single dimensions.

*Dependent variable*

The dependent variable, namely the overall internationalization performance of a start-up, was measured with a ten-point Likert-scale. For this, I chose the subjective assessment of the overall performance of internationalization since this indication could be made by all participating start-ups, not only the ones that had already finished internationalizing. According to Stuart and Abetti (1987), this subjective measure of success can be used in a new venture setting.

In general however, internationalization performance can be measured with subjective and objective variables (Hult et al., 2008). Prior research shows that start-ups tend to be reluctant to share objective data such as financial information (Sapienza, Smith, & Gannon, 1988). Therefore, I use subjective performance indicators because they have been proven to correlate with objective indicators (Dess & Robinson Jr, 1984). However, there are commonly accepted subjective performance measures for start-ups (Brush & Vanderwerf, 1992). The performance measures asked for in the questionnaire mainly follow the approach of Aspelund et al. (2007), who advised employing hard and soft factors for a holistic view of a start-up's performance. According to this approach, start-ups rated three hard factors (international market share increase, total sales increase, and Return on Investment) and three soft factors (new capabilities gains, network expansion, and competitive position enhancement; Tsai, MacMillan, & Low, 1991; McDougall & Oviatt, 1996; Zahra et al., 2000; Gilbert, McDougall, & Audretsch, 2008).

These granular factors, however, could only be indicated by start-ups that have already internationalized because they are very difficult to predict. Since there is a significant number of start-ups within the sample that have not finished or not yet started internationalizing, I chose the subjective assessment of the overall internationalization performance to be able to bring together all responses.

*Moderating variable*

For the moderating variable, I use the relative quality level of the start-up's products. This variable is proven to actively shape new venture internationalization because a higher product quality than the competition fuels foreign sales and internationalization (McDougall et al., 2003).

*Control variable*

To strengthen the robustness of the findings, a control variable that might influence the internationalization performance of a start-up has been included. The selected control variable is the firm age, in accordance with current INV research of Naldi et al. (2020) and McNaughton (2003).

4.3. Analysis

To test the hypotheses shown in the Analysis Model in Figure 3 and described throughout Section 3.2, I employ regression analyses based on the Ordinary Least Squares (OLS) method. In line with the stated hypotheses, I will complement the simple linear regression models with linear regression models in which a quadratic term is added to the interaction.

*Simple linear regressions*

For all hypotheses except H5, H9, and H11, I follow most previous INV and international business studies research (e.g., McDougall & Oviatt, 1996; Zahra, Matherne, & Carleton, 2003; Schueffel, Amann, & Herbolzheimer, 2011; Braga, Marques, & Serrasqueiro, 2018) in using simple linear regressions. I use linear regressions to determine the impact of *Strategic Moves* on the internationalization performance of a start-up. Therefore, the dependent variable in the regressions is the overall internationalization performance of the start-up, and the independent variable is the respective variable stated in the hypothesis description.

*Linear regressions with a quadratic term*

For hypotheses H5, H9, and H11 – namely, the inclusion of psychological distance when choosing host markets, the internationalization path, and the international strategy – I use linear regression with a quadratic term. As presented in Chapter 3, for all three *Strategic Moves* I expect to find extreme points (high points). Therefore, linear regressions with a quadratic term have been preferred over simple linear regressions, as already done by Guo and Wang (2021), for the internationalization path of INVs (Fernhaber & McDougall-Covin, 2014) and for the relationship of internationalization degree and INV performance.

All hypotheses are tested within their own regression models because the relatively low sample size does not allow a single regression model for all independent variables. All regression analyses are performed using IBM SPSS 28.

**5. Results**

The results presented in this chapter include the regression results of the analyses described in Chapter 4 for the *Strategic Moves* and the literature review results of the start-up's *Heritage*. These results form the basis of the succeeding framework and the discussion presented in Chapter 6.

**Table 3:** Descriptive Statistics.

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Firm age (1) | 1.000 | | | | | | | | | | | | | | | | | |
| Relative product quality (2) | .067 | 1.000 | | | | | | | | | | | | | | | | |
| Task-force usage (3) | .045 | -.101 | 1.000 | | | | | | | | | | | | | | | |
| Consulting support addition (4) | -.098 | .014 | .198† | 1.000 | | | | | | | | | | | | | | |
| C-level ownership (5) | .095 | -.165 | -.057 | -.194† | 1.000 | | | | | | | | | | | | | |
| Market seeking objective (6) | -.051 | .109 | -.130 | .099 | .200 | 1.000 | | | | | | | | | | | | |
| Inclusion of psychological distance in host market analyses (7) | .157 | .106 | .022 | .223† | .102 | -.151 | 1.000 | | | | | | | | | | | |
| Equity operating mode (8) | -.056 | .255* | .103 | .051 | -.283* | -.006 | -.150 | 1.000 | | | | | | | | | | |
| Greenfield entry approach (9) | .132 | .126 | .077 | .031 | -.158 | .428** | -.173 | .404** | 1.000 | | | | | | | | | |
| Acquisition entry approach (10) | -.024 | .010 | .147 | .280* | -.345** | .169 | .066 | .331** | .318* | 1.000 | | | | | | | | |
| Initial internationalization path to multiple countries on the same continent (11) | .092 | -.048 | -.108 | .103 | -.254* | .216† | -.240* | .170 | .240* | .076 | 1.000 | | | | | | | |
| Strategic leader subsidiary role (12) | .041 | .026 | .139 | .113 | -.061 | -.143 | .083 | .043 | .119 | -.060 | .206 | 1.000 | | | | | | |
| One-dimensional international strategy (13) | .084 | -.003 | -.029 | -.168 | .139 | -.004 | -.128 | .281 | .208 | -.201 | .038 | .205 | 1.000 | | | | | |
| Integration of internal activities (14) | -.255† | .026 | -.028 | -.041 | -.144 | -.171 | -.015 | -.012 | .241 | -.206 | .062 | .168 | .041 | 1.000 | | | | |
| Responsiveness of external activities (15) | -.004 | -.037 | -.025 | -.341* | .123 | .001 | .063 | .227 | .012 | -.338* | -.131 | .090 | .204 | .030 | 1.000 | | | |
| Product adaptation (16) | .096 | .213 | .133 | -.096 | -.178 | .104 | .156 | .418** | .439** | .169 | -.050 | -.089 | .053 | .130 | .637** | 1.000 | | |
| Knowledge transfer (17) | .152 | -.075 | .128 | .125 | .064 | -.089 | .026 | .450** | .384** | .033 | .111 | .034 | .112 | .327* | .298* | .403** | 1.000 | |
| Total internationalization performance (18) | .232† | .352** | -.201 | -.156 | -.039 | -.110 | .004 | .346** | .252** | -.127 | -.094 | .121 | .224 | .359* | .315* | .408** | .597** | 1.000 |
| Mean | 5.39 | 8.47 | .31 | .20 | .84 | .82 | 4.56 | .55 | .57 | .12 | 1.86 | .57 | 1.79 | 5.15 | 6.70 | 4.8 | 4.51 | 7.06 |
| Standard deviation | 3.51 | 1.06 | .47 | .40 | .37 | .39 | 2.19 | .50 | .50 | .33 | .66 | .50 | .69 | 2.29 | 2.46 | 2.62 | 1.87 | 2.11 |

Note: n = 37 for (10), n = 34 for (11), n = 32 for (13), n = 35 for (12), and n = 37 for (15); Sig. (one-tailed) used; For (7), (11), and (13) the quadratic variables were used †$p < 0.1$, *$p < 0.05$, **$p < 0.01$

## 5.1. Study analysis results of the start-up's Strategic Moves

The effects of *Strategic Moves* on the international performance of a start-up are tested with the analysis model shown in Figure 3. First, the descriptive statistics are shown in Table 3. Then, the results of the regressions are shown in Table 4 and explained. Finally, the results of the statistical properties are presented.

### Descriptive statistics

See Table 3.

### Regression results

As illustrated in Table 4, the results of the simple linear regressions that included the control variable reveal that market entry activities and global management activities in particular have a significant effect on the international performance of a start-up. For international expansion planning activities, hypotheses H1, H2, H3, and H4 do not show a signification relationship and are therefore discarded. For the inclusion of the psychological distance when choosing a host market, the curvilinear model shows a significant ($b = -1.750$, $p < 0.01$) high point at a medium degree of inclusion leading to the expected inverted U-curve relationship and supporting H5. For market entry activities, the choice of equity modes when entering a host country significantly enhances the international performance of a start-up ($b = .360$, $p < 0.01$), supporting H6 in the study. In H7 and H8, I expected that the greenfield approach to foreign operations would positively affect the internationalization performance of start-ups while the acquisition approach would affect it negatively. The results show support for H7 ($b = .252$, $p < 0.10$) when the control variable is not included; however, they show no support when it is included and no significant relationship for H8, which is the acquisition entry type. H9 received no significant support. H10 shows no significant relationship between the subsidiary role as a strategic leader and the internationalization performance of a start-up. The one-dimensional international strategies do enhance the international performance of a start-up better than the non-dimensional or two-dimensional strategies ($b = -1.737$, $p < 0.10$), thus supporting H11. As hypothesized for H12 and H13, the integration of internal activities of the value chain ($b = .409$, $p < 0.05$) and the local responsiveness of external activities ($b = .316$, $p < 0.10$) of the value chain both have a significantly positive effect on the internationalization start-up performance. The adaptation of a start-up's products to the host market requirements leads to a higher international performance of the start-up ($b = .389$, $p < 0.01$), therefore supporting H14. Finally, knowledge transfer activities enhance the international start-up performance ($b = .581$, $p < 0.01$); thus, H15 is also supported.

### Moderating variable analysis results

Considering the moderating effect of the relative product quality on the relationships between the *Strategic Moves* and the new venture internationalization performance stated in H16, the results show that the interaction coefficient is significant for H5 ($b = -.031$, $p < 0.05$), H7 ($b = -1.512$, $p < 0.01$), H8 ($b = -1.406$, $p < 0.05$), and H14 ($b = -.196$, $p < 0.05$). It shows that a start-up's relative product quality does influence the relationship between its international performance and the *Strategic Moves,* the inclusion of the psychological distance when choosing host markets, the greenfield entry mode, the acquisition entry mode, and the degree of product adaptation. Additionally, the regression results of the effect of the product quality on the internationalization performance ($b = .338$, $p < 0.05$) are significant. H16, however, is not supported since there is a moderating effect on only 4 out of the 15 hypotheses regarding the *Strategic Moves* and these effects are negative instead of positive (as it has been expected).

### Statistical properties results

To test the usability of the variables for the regression analyses, I conducted a Kolmogorov–Smirnov test to determine the normal distribution of the variables following Yaacob *et al.*'s (2014) approach when researching start-up performance. I test for heteroscedasticity with a scatterplot-based approach, as performed by Fuad and Akbar (2018) when analyzing INV performance. Additionally, I investigate the multicollinearity with the Variance Inflation Factor (VIF) method (Raykov & Marcoulides, 2012).

The results of the Kolmogorov–Smirnov test show that the data collected is not for all variables normally distributed. For the most variables used, *p (Asymp. Sig. (2-tailed)* $< 0.05$ shows a normal distribution. However, the integration degree of internal activities ($p = .141$), the responsiveness degree of external activities ($p = .200$), and the knowledge transfer ($p = .198$) show values of $p > 0.05$ making them non-parametric and therefore not robust for regression analyses. These results do not impede the results of the regression analyses since the used OLS method is very resistant to this phenomenon (Cohen, 2013).

Regarding heteroscedasticity, the used independent, dependent, moderating, and control variables showed a homoscedastic pattern indicated by their scatterplot. They are therefore appropriate to be used in regression analyses.

For multicollinearity, there is no multicollinearity for the independent variables I use for hypotheses testing in the regression models based on the VIF values that are all lower than 2. Additionally, the Pearson correlation values between all variables presented in Table 3 are all lower than 0.7, also not suggesting potential multicollinearity.

## 5.2. Literature review results of the start-up's Heritage

The effect a start-up's *Heritage* has on its internationalization speed and expected international performance was

**Table 4:** Regression Results.

| | Independent variables | Expected relation | Total Internationaliz-ation performance (without ctrl. variable) | Adjusted $R^2$ (without ctrl. variable) | Total Internationaliz-ation performance (with ctrl. variable) | Adjusted $R^2$ (with ctrl. variable) |
|---|---|---|---|---|---|---|
| H1 | Task force usage | + | - .201 | 0.021 | - .212 | 0.061 |
| H2 | Consulting support addition | + | - .156 | 0.004 | - .134 | 0.033 |
| H3 | C-level ownership | + | - .039 | - 0.019 | - .062 | 0.018 |
| H4 | Market seeking objective | + | - .110 | - 0.008 | - .098 | 0.024 |
| H5 | Inclusion of psychological distance in host market analyses | ∩ | - 1 .675* | 0.087 | - 1 .750** | 0.137 |
| H6 | Equity operating mode | + | .346* | 0.102 | .360** | 0.149 |
| H7 | Greenfield entry approach | + | .252† | 0.044 | 0.225 | 0.066 |
| H8 | Acquisition entry approach | - | - .157 | - 0.004 | - .121 | 0.030 |
| H9 | Initial internationalization path to multiple countries on the same continent | ∩ | .666 | - 0.016 | 0.404 | 0.013 |
| H10 | Strategic leader subsidiary role | + | .121 | - .014 | .115 | - .021 |
| H11 | One-dimensional international strategy | ∩ | - 1 .658† | 0.087 | - 1 .737† | 0.096 |
| H12 | Integration of internal activities | + | .359* | 0.102 | .409* | 0.113 |
| H13 | Responsiveness of external activities | + | 0.315† | 0.070 | 0.316† | 0.047 |
| H14 | Product adaptation | + | .408** | 0.149 | .389** | 0.171 |
| H15 | Knowledge transfer | + | .597** | 0.338 | .581** | 0.331 |

Note: Sig. (two-tailed) used
+ = positive relation, - = negative relation, ∩ = inverted U-shaped relation
†$p < 0.1$, *$p < 0.05$, **$p < 0.01$

investigated with the help of a literature review. Accordingly, I collected 87 qualitative and quantitative data points from 45 papers and publications. The papers and publications focused on INV studies and have been published in highly ranked journals in the INV research field such as *Journal of International Entrepreneurship*, *Journal of International Business Studies*, and *Journal of International Management*. A list of the papers and publications can be found in Appendix A. The results of the literature review are summarized in Table 5.

*Environmental factors*

For the availability of and access to venture capital in a start-up's home country, the literature shows a *mostly positive effect*. This is due to the faster internationalization speed funded by the higher average financial capital per start-up (Fernhaber et al., 2007; M. Wright, Robbie, & Ennew, 1997). The availability of venture capital is one of the most influential institutional factors for start-up internationalization (Nowiński & Rialp, 2013). Only when venture capital cannot overcome the existing barriers to internationalization is the effect shown to be negative (Shaw & Darroch, 2004).

For the ICT and mobility infrastructure of a new venture's home country, the literature shows an *exclusively positive effect*. This is due to better possibilities of information gathering about foreign markets and competition and international networking opportunities (Bell & McNaughton, 2000;

**Table 5:** Literature Review Results.

| Heritage factors | Relationship found | Relationship description | Sources |
|---|---|---|---|
| Availability of and access to venture capital | + | High availability and easy access is beneficial | Fernhaber et al. (2007); Nowiński and Rialp (2013) |
| ICT and mobility infrastructure | + | Well-developed infrastructure is beneficial | Knight and Cavusgil (1996a); Bell and McNaughton (2000) |
| Intnationalization degree of industry | + | High international degree of industry is beneficial | Madsen and Servais (1997); McDougall et al. (2003) |
| Competition | ∩/- | Mixed results found; medium to low degree of competition is beneficial | Shrader, Oviatt, and McDougall (2000); Saiyed, Fernhaber, Basant, and Dhandapani (2021) |
| Founders' characteristics | + | International experience, international vision and industry experience are beneficial | McDougall et al. (1994); Shrader et al. (2000) |
| Business strategy | +/- | Differentiation and niche strategy are beneficial; cost leadership strategy is detrimental | Burgel and Murray (2000); Knight and Cavusgil (2004) |
| Resources | + | Organizational (learning orientation) and relational (networks) capabilities are beneficial | Zahra et al. (2000); Cavusgil and Knight (2015) |

Note: Sources are only exemplary and just an excerpt from all sources used for the literature review.

Hamill & Gregory, 1997; Knight & Cavusgil, 1996a, 1996b; Loane, 2005). Infrastructure developments also enhance the internationalization of business models such as e-commerce businesses by providing the requirements for internet selling and shipping (Loane, McNaughton, & Bell, 2004). Moreover, state-of-the-art ICT technology lays the foundation for more efficient international business activities and processes (Cavusgil & Knight, 2015).

*Industry factors*

For the internationalization degree of a start-up's industry, literature shows a *mostly positive effect*. Factors that represent together the internationalization degree of an industry such as global demand, level of global integration of business activities, and international footprint of competition lead to fast internationalization and higher expected international performance (Evers, 2010; Fernhaber et al., 2007; Madsen & Servais, 1997; McAuley, 1999; McDougall et al., 2003). This is partly because the degree of internationalization is a success factor in the industry, for instance, by shortening product life cycles (Coviello & Munro, 1995) and partly due to the isomorphic behaviour of companies replicating internationalization movements of the competition (Fernhaber et al., 2007). Only Andersson et al. (2014) showed a mixed effect, depending on industry-specific drivers and barriers.

For the competition in a start-up's industry, the literature shows *mixed effects*. Saiyed et al. (2021) claim that there is an inverted U-curve effect of industry concentration on internationalization performance. This means that a very low and a very high number of competitors hinder start-up internationalization while a goldilocks medium number of competitors reinforces start-up internationalization. Other research results suggest that high competition intensity negatively influences start-up internationalization (Shrader et al., 2000) and that industry profitability (which is most often the case when competition intensity is low) positively influences start-up internationalization (Bloodgood et al., 1996). Moreover, other research results indicate no clear or no significant relationships between competition within an industry and the internationalization of new ventures (Andersson et al., 2014; McDougall et al., 2003).

*Start-up characteristics*

For the founders of a start-up, the literature shows an *exclusively positive effect* of prior general and industry-specific experience (Evers, 2010; Matiusinaite & Sekliuckiene, 2015; McDougall et al., 1994; Reuber & Fischer, 1997; Wickramasekera & Bamberry, 2001), prior international experience (Autio & Sapienza, 2000; Crespo & Aurélio, 2020; Kuemmerle, 2002; Madsen & Servais, 1997; McDougall et al.,

2003, 1994; Nowiński & Rialp, 2013; Reuber & Fischer, 1997; Shrader et al., 2000), and international vision and mindset (Johnson, 2004; McDougall et al., 1994; Moen, 2002; Servais & Rasmussen, 2000; Weerawardena, Mort, Liesch, & Knight, 2007) on start-up internationalization. This is because these aspects enhance international opportunity recognition, access to international networks, and lead to better decision-making regarding international moves. Only when considering the founder's gender, Lee, Paik, and Uygur (2016) found a negative effect of the female gender on start-up internationalization when venture capital is required.

Regarding a start-up's business strategy, the literature shows on the one hand an *exclusively positive effect* of differentiation and niche strategies (Bloodgood et al., 1996; Burgel & Murray, 2000; Cavusgil & Knight, 2015; Knight & Cavusgil, 2004, 2005; Madsen & Servais, 1997; McDougall et al., 2003). On the other hand, the literature shows an *exclusively negative effect* of cost-leadership strategies (Knight & Cavusgil, 2005; McDougall et al., 2003). Moreover, McDougall and Oviatt (1996) found a *mixed effect* of strategic change on start-up internationalization.

For the resources of a start-up, the literature shows an *exclusively positive effect* of organizational and, even more, of relational capital on new venture internationalization. Main organizational capital contributors are learning capabilities, marketing capabilities, technological knowledge and product development, and innovative culture (Cavusgil & Knight, 2015; Knight & Cavusgil, 2004; Madsen & Servais, 1997; Martin & Javalgi, 2019; Murray, Gao, & Kotabe, 2011; Weerawardena et al., 2007; Zahra et al., 2000). Main relational capital contributors are the inclusion in global networks and alliances, and international sales contacts (Coviello & Munro, 1995) Cavusgil and Knight (2015); Coviello (2006); Johnson (2004); Loane and Bell (2006); Matiusinaite and Sekliuckiene (2015); Schwens and Kabst (2009); Servais and Rasmussen (2000); Wickramasekera and Bamberry (2001); Yu, Gilbert, and Oviatt (2011). For financial capital, the literature shows a *mixed effect*. It either does not affect start-up internationalization or affects it indirectly by enhancing employees' optimism (Lee et al., 2016; Nummela, Saarenketo, & Loane, 2016).

## 6. Discussion

Firms tend to internationalize earlier than in the past because early internationalization enhances international performance (Autio, Sapienza, & Almeida, 2000). The properties that early internationalizing start-ups have are now better understood as well as the rationale behind their rapid speed of internationalization (McDougall et al., 1994). However, prior research offers only little insight into how early internationalizing start-ups should set up their strategy for the complex and crucial step of expanding their business globally (Paul & Rosado-Serrano, 2019). Additionally, existing literature does not offer a holistic overview of the effects of the starting point of a new venture in combination with the chosen strategy for internationalization on the international performance of new ventures (Cavusgil & Knight, 2015).

Extending prior research, I investigated, on the one hand, the *Strategic Moves* start-ups should undertake to enhance their internationalization performance with a quantitative field study. On the other hand, I synthesized existing findings on the *Heritage* of start-ups with a qualitative literature review. The literature review and the study broaden our understanding of action steps to win on a global level as an early internationalizing start-up, creating an initial holistic concept for start-up internationalization. Taken together, the findings close the two research gaps indicated in Figure 1 and answer the research question stated in Chapter 1 about how and to what extent the *Heritage* and the *Strategic Moves* influence the internationalization performance.

In the following sections, I establish a framework based on my results and discuss the gained insights from my analyses while giving further indications on these aspects. Then, I present the theoretical and managerial implications. Following this, I outline the limitations of the work and show future research directions.

### 6.1. Start-up Internationalization Framework

Based on the results presented in Chapter 5, I develop the Start-up Internationalization Framework shown in Figure 4. The framework indicates how to ideally configure the *Heritage* of a start-up from the founding day on and which *Strategic Moves* to undertake during the internationalization for an optimal outcome.

The framework highlights one overarching and eight specific aspects regarding the *Strategic Moves*. The overarching aspect is the two-fold perspective on the internationalization of a start-up. The specific aspects regarding the *Strategic Moves* for the international expansion planning activities are the inclusion of the psychological distance when selecting host markets; for market entry activities, it is the entrance with equity modes and building up foreign operations from scratch; and for global management activities, it is the selecting of a one-dimension international strategy, the integration of internal activities, the local responsiveness of external activities, the local adaptation of the products, and the knowledge transfer.

The two-fold perspective is the combination of the start-up's unchangeable *Heritage* that exists prior to its internationalization and its changeable *Strategic Moves* while internationalizing. The framework shows that the internationalization performance of an early internationalizing start-up under no circumstances is only affected by the pre-internationalization factors as is often stated in the born-global literature (e.g., McDougall et al., 1994). In fact, the internationalization performance is greatly affected by aspects of the internationalization strategy itself which can take different forms. Additionally, the framework shows that start-ups can bring themselves into a pole position for internationalization by shaping their *Heritage* correctly. For the start-up characteristics, this is intuitively plausible since all aspects can be altered. A start-up's business strategy
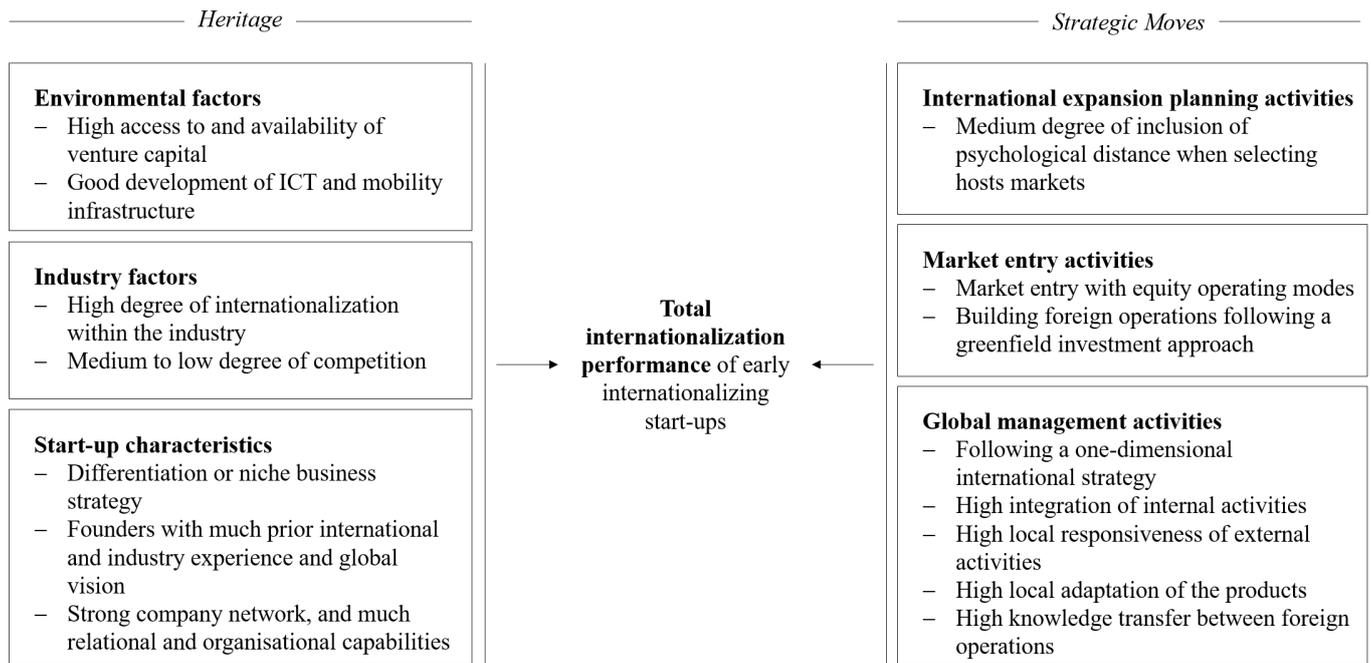
―――――――――――― *Heritage* ――――――――――――                    ―――――――――――― *Strategic Moves* ――――――――――――

**Environmental factors**
– High access to and availability of
  venture capital
– Good development of ICT and mobility
  infrastructure

**Industry factors**
– High degree of internationalization
  within the industry
– Medium to low degree of competition

**Start-up characteristics**
– Differentiation or niche business
  strategy
– Founders with much prior international
  and industry experience and global
  vision
– Strong company network, and much
  relational and organisational capabilities

**Total
internationalization
performance** of early
internationalizing
start-ups

**International expansion planning activities**
– Medium degree of inclusion of
  psychological distance when selecting
  hosts markets

**Market entry activities**
– Market entry with equity operating modes
– Building foreign operations following a
  greenfield investment approach

**Global management activities**
– Following a one-dimensional
  international strategy
– High integration of internal activities
– High local responsiveness of external
  activities
– High local adaptation of the products
– High knowledge transfer between foreign
  operations

**Figure 4:** Start-up Internationalization Framework.

can be changed by its executives, founders can work on their personal development, and crucial resources such as network partners can be cultivated from the start or when preparing for internationalization. Moreover, this is also possible for environmental and industry factors. Headquarters can be changed during the beginning of a start-up life. Start-ups from Europe and other continents, for instance, do the "Delaware flip", which is registering a subsidiary in Delaware, USA, where the filing and business law for start-ups is easiest to follow in the U.S. (Warnes, 2022). In this way, start-ups profit from American accelerators, such as the Y-Combinator that requires the HQ to be in the U.S., venture capital, and infrastructure. Within an industry, start-ups can change customer and product segments or value chain stages they focus on (Bajwa et al., 2017). Upstream value chain stages are typically more profitable and service-oriented, allow for more differentiation, and show a more global level of industry (Ju & Yu, 2015). However, apart from the starting position of the start-up before internationalizing, the configuration of *Strategic Moves* is crucial as well.

*International expansion planning activities*

For the international expansion planning activities, my results show that it is crucial to include the psychological distance when selecting host markets. However, the ideal degree of inclusion of the psychological distance is not the more the better. Rather, the inclusion of the psychological distance is ideal when it leaves space for and is complemented by the inclusion of economic factors such as market size and growth. Hence, neither no inclusion nor the sole inclusion of the psychological distance is ideal. This inverted U-

shape relationship for early internationalizing start-ups contradicts the Uppsala model for MNEs proposed by Johanson and Vahlne (1977). Using only the psychological distance leads to the miscalculation that foreign operations in the psychologically near countries are inappropriately simple to manage and important differences that exist are thus ignored (O'grady and Lane, 1996). Ideally, a start-up should balance the psychological distance and economic criteria such as market size, market growth, product life cycle, and foreign competition intensity to enhance internationalization performance. Psychological distance needs to be included to some degree because it prevents start-ups with organizational restrictions from overestimating their capabilities and expanding too broadly. However, not exclusively focusing on the psychological distance allows start-ups to expand to economically relevant host markets with high market size and higher share of customer adaptation instead of limiting them to immediately neighboring countries. Additionally, targeted managerial actions can enable companies to overcome liabilities of foreignness stemming from the psychological distance (Child, Rodrigues, & Frynas, 2009).

*Market entry activities*

For the market entry activities, my results show that using equity operating modes such as sales branches, production sides, or fully owned subsidiaries when entering host markets and entering them following a greenfield investment approach is ideal when internationalizing as a start-up. This effect for the greenfield investment approach however has been significantly shown only in the regression model without the control variable and has not been sustained when the

control variable was added to the model. The effect is nevertheless included in my results and discussed in this chapter since it does show an existing tendency.

The superiority of equity modes can be explained by a start-up's characteristics and by host market specifics. The offering of technologically advanced products and services by early internationalizing start-up's favors equity modes. This is due to the high need for knowledge transfer, especially tacit knowledge, when producing, developing, and distributing those products and services (Brouthers & Hennart, 2007). Additionally, equity modes allow for a high control of foreign operation activities that is necessary when entering high-risk host markets that are unstable, fast growing, and competitive (Rasheed, 2005). Taken together, equity operating modes enable start-ups to tightly manage their foreign operations and overcome obstacles created by risky host markets or by potential management control demise due to the global expansion. Moreover, equity modes allow start-ups with totally global internationalization ambitions to internalize best practices and build up internationalization capabilities that enhance future success (Ripollés & Blesa, 2017).

According to my results, the equity operating modes should ideally be implemented by early internationalizing start-ups via a greenfield approach. The effect suggests that foreign operations should be built up internally from scratch rather than bought from other companies via M&A activities or created within IJVs. Building up foreign operations includes the following: hiring of foreign staff, potentially including a country director from the free market or from competitors or other companies and possibly the transfer of expats from HQ; the set-up of office locations that are either bought or built; and the transfer of inter-firm infrastructure such as the IT-landscape, processes, and so forth. The advantages of the greenfield approach are that it allows for easier duplication of firm structures and policies, transfer of competitive advantages that are not location-bound, and the control of foreign subsidiaries (Harzing, 2002). For early internationalizing start-ups, it is vital to maintain a high speed of development while continuously enhancing the competitive position. Accordingly, the greenfield approach enables firms that developed strong intangible capabilities to internationalize most effectively (Brouthers & Brouthers, 2000). This approach is crucial for new venture internationalization because it allows start-up headquarters to maintain a certain level of control and transfer intangible resources and capabilities that are the main sources of competitive advantage. Only when local capabilities are needed that cannot be obtained through hiring and adoption of existing structures can collaboration modes or acquisitions complement the greenfield approach.

*Global management activities*

For the global management activities, my results illustrated in the Start-up Internationalization framework show that five activities enhance the internationalization performance. These activities are the selection of a one-dimensional international strategy, the global integration of internal value chain activities, the local adaptation of external value chain activities, the local adaptation of the products and services, and extensive knowledge transfer.

When coordinating cross-border operations at the highest strategic level, a one-dimensional international strategy – the global or the multidomestic strategy – is optimal according to my results. Which of the two strategies is ideal depends on the business strategy of start-up and the characteristics of the industry it is in and is not investigated in with my study. However, employing a simple international strategy or a transnational strategy is, according to my results, detrimental for the internationalization performance of new ventures. This is because the simple international strategy is only an intermediate form that does not focus on enhancing the competitive position (Gooderham et al., 2019). The transnational strategy, by contrast, focuses on many complex enhancements of the competitive position at the same time, leading to overwhelming pressure from different directions. This scattered focus hinders rather than supports the international expansion of young firms (Bartlett & Beamish, 2018). The global and the multidomestic strategy thus have the ideal complexity-to-value-add ratio. The global strategy is most appropriate when local responsiveness needs are low and competitive advantages stem from intangible capabilities built at the HQ that need to be transferred with tight control to foreign operations. Whereas the multidomestic strategy is most appropriate when local responsiveness needs are high, foreign operations need to build up location-bound firm-specific advantages and subsidiaries need a high degree of autonomy.

Going one strategic level lower, there are the value chain activities. My results in the framework suggest that, independent of the international strategy, globally expanding start-ups enhance their internationalization performance best if they integrate internal activities and locally adapt their external activities. Internal activities support the international business development most when they are globally integrated between the foreign subsidiaries because they enhance the efficiency within the firm (Kobrin, 1991). Typically, R&D is fundamental for all subsidiaries without (for the most part) the need to be location-specific (Chiesa, 1996). Centralizing purchasing often comes with leaner processes and higher negotiation power when procuring material, licenses, and services (Tella & Virolainen, 2005). The degree of integration of these activities depends, however, partly on the international strategy; integration is higher when a start-up follows a global strategy.

External value chain activities enhance the internationalization performance according to my results when they respond locally to host market needs. Doing so results in activities that are more effective in the geographical areas (Prakash & Singh, 2011). It is crucial for these customer-facing activities to adapt since the customer characteristics usually change between geographical markets (Solberg, 2000). Customer journeys, buying center dynamics in B2B customers, and expectations regarding customer service support vary

among host markets. Additionally, pricing implications differ because of the changing environment of customers as well as channels and content for performance marketing and the way of selling and negotiating.

When focusing primarily on integrating internal activities and adapting external activities to local needs, it is crucial to consider the minimum necessary level of adaptation of internal activities and integration of external activities as well (Berchtold et al., 2010). For instance, it is essential for start-ups when considering product development to tap into local know-how clusters (Lorenzen & Mahnke, 2002). Only these clusters of talent can, for example, locally adapt the product development if user interface designs of Software as a Service (SaaS) products differ. On the other hand, while adapting marketing activities, it is important to foster a certain level of best practice sharing to not reinvent practices that are working well (Matanda & Ewing, 2012).

Considering a start-up's products and services rather than the activities with which it is developed and distributed, my results in the Start-up Internationalization Framework suggest that the products and services need to be adapted to local circumstances. This is supported by results with MNEs as subjects for export firms as well as for firms with foreign subsidiaries (e.g., Tantong, Karande, Nair, & Singhapakdi, 2010); these results are often subdivided into the adaptation of quality, design, and brand name (Zou, Andrus, & Norvell, 1997). The adaptation pressure of these three aspects comes from internal and external factors. Changing competitors, industry peculiarities, and customer preferences are external factors (Tigre & Dedrick, 2004), and differing local firm strategies, and sales capabilities are internal factors (Calantone et al., 2006). Most often, these factors motivate internationalizing start-ups to adapt their products to enhance product-market fit. Sometimes, however, the changes are necessary for a viable market entry. Software products need to be available in the respective language as well as package inserts and instructions for material products. In China, most foreign B2C SaaS start-ups need to adapt their products so that they can be used via WeChat, the Chinese multi-purpose app (Plantin & De Seta, 2019). When entering a "bottom-of-the-pyramid" market which is a market with a globally low level of average income, such as India, the entire range of product characteristics needs to be adjusted to the local rules (Gebauer, Haldimann, & Saul, 2017). Fast moving consumer goods (FMCG) products need to be highly adapted to cultural and socio-economical preferences (Le Meunier-Fitz Hugh, Cometto, & Johnson, 2021). Service products need to be adapted to social norms (Lovelock & Yip, 1996).

Lastly, according to my results, extensive knowledge transfer between the HQ and subsidiaries and between subsidiaries themselves leads to a better internationalization performance of start-ups. Independent of the international strategy, knowledge transfer through management-initiated practices reinforces *Strategic Moves* in all areas. When subsidiaries are mandated to expand to neighboring countries or develop new capabilities, the sharing of experiences from similar former initiatives is important (Crespo, Crespo, &

Curado, 2022). When implementing an equity mode via a greenfield approach, the transfer of expats from HQ to the subsidiary strengthens the initial development and speeds up the implementation while later on it eases the reverse knowledge transfer of the subsidiary to the HQ (Sarala, Sumelius, Sarala, & Sumelius, 2005). Moreover, when a global start-up sets up its international strategy and integrates or adapts activities and products, the knowledge transfer activities create common understanding and holistic buy-in from local top-management (Easterby-Smith, Lyles, & Tsang, 2008). Knowledge transfer is not only important for the formalized, technical know-how that is necessary for the day-to-day business routine of a start-up. It is much more important for the unformalized, relational know-how that often is unique in start-ups and that is the main aspect holding a young organization together. Examples are the company culture, interaction modes when working in cross-departmental teams, or tacit knowledge potentially described as "being a good saleswoman" or "being a good leader". Start-ups internationalize because they have been very successful in the home market through competitive advantages based on internal capabilities. When internationalizing, start-ups want to build upon these capabilities independently from the international strategy and the degree of autonomy they attribute to subsidiaries. Additionally, for the ramp-up in host markets, a rather tight control is necessary to have a well-built organization abroad from the first day on. To achieve this, face-to-face communication is highly important when transferring knowledge (De Meyer, 1991). Furthermore, informal networks and activities of employees from different subsidiaries, such as an informal leadership network, are beneficial (Ghoshal, Korine, & Szulanski, 1994). Moreover, to achieve formalized knowledge and procedures, common digital databases with texts, graphs, and videos that are accessible by all employees are crucial (Schreiber & Carley, 2003). At the same time, to foster cross-border communication and interaction, a common intranet and common systems such as project management tools must be in place (Buniyamin & Barber, 2004).

## 6.2. Theoretical implications

This work considers prior calls by INV research suggesting that there is need for quantitative insights into start-up internationalization strategy design to complement existing research on antecedents of start-up internationalization (Cavusgil & Knight, 2015). The work thus answers the stated research question with insights about how and to what extent a start-up's *Heritage* and its *Strategic Moves* collectively influence the internationalization performance. By answering the research question, this work expands existing research in two directions. Namely, the two research gaps that are illustrated in Figure 1. First, this work provides systematic insights into the *Strategic Moves* of early internationalizing start-ups. This has been done only sporadically before because the research previously focused on a start-up's *Heritage*. Second, this work establishes a holistic framework for start-up internationaliza-

tion by complementing the study on *Strategic Moves* with the literature review on the start-up's *Heritage*.

For the systematic insights on *Strategic Moves*, the study results show which moves are beneficial for start-up internationalization. These results enhance prior research that deduced insights from case studies by founding the insights on a data set of 51 international new ventures. Prior studies on international new ventures have focused – with the help of case studies – on determinants of internationalizing start-ups and of external and firm-internal factors influencing the speed and rationale of internationalization (Knight & Liesch, 2016). In my study, I complement and extend this research by adding an important dimension of self-control for start-ups when expanding globally – namely, the *Strategic Moves* which can be designed independently from a start-up's *Heritage* to enhance internationalization performance.

The selection of the *Strategic Moves* grouped into three categories – the international expansion planning activities, the market entry activities and the global management activities – further extends the existing findings by providing an overview of the most important *Strategic Moves* for start-up internationalization. This overview could be further enhanced only by the addition of the IHRM that has not been considered in the Start-up Internationalization Framework. The compilation of the *Strategic Moves* allows research to streamline and focus future research efforts and ensures the inclusion of the most important factors.

When looking at all individual *Strategic Moves*, the results provide insights into which moves lead to higher internationalization performance. These results adjust the frameworks and implications that exist in the MNE literature to the early internationalization start-up setting. In particular, the inverted U-shaped relationship between the degree of inclusion of the psychological distance when choosing host markets and the internationalization performance shows the position of early internationalizing start-ups relative to born globals and MNEs. For MNEs, the relation is linear in accordance with Johanson and Vahlne's (1977) Uppsala Model. For born globals, there is no relationship because born globals internationalize worldwide rapidly (Oviatt & McDougall, 1997). Early internationalizing start-ups, however, need to balance the psychological distance with economic factors when aiming to internationalize.

In addition to that, my results show that market entry with equity modes and following a greenfield investment procedure enhance the internationalization performance. In MNE literature, all viable alternatives within these two areas received support in certain settings. My study showed that the two named alternatives are advantageous when looking at early internationalizing start-ups, setting an anchor point that did not exist before.

Further, my results show that a one-dimensional international strategy is best for early internationalizing start-ups, that internal value chain activities need to be globally integrated, external value chain activities as well as products need to be locally adapted, and extensive knowledge transfer across foreign operations needs to be fostered. Show-

ing which *Strategic Moves* lead to higher internationalization performance for start-ups allows future research to focus on these moves and to deepen our understanding of them. The importance of a one-dimensional strategy specifically provides new insights that do not confirm existing MNE literature. In MNE literature, all types of international strategy have a rationale to be chosen; however, when looking at early internationalizing start-ups, only the one-dimension international strategy is a reasonable choice. Ruling out the simple and the transnational strategy, this new finding allows future research to investigate in depth the global and multidomestic strategy for early internationalizing start-ups.

For the holistic framework of start-up internationalization, including both the *Heritage* and the *Strategic Moves*, the Start-up Internationalization Framework shows a more comprehensive framework than prior research has developed so far. The compilation of the *Heritage* factors enhances existing meta-analyses by not only gathering all prior findings regarding INV characteristics but also by synthesizing the most important factors. Showing that the start-up's competition is one of the most important *Heritage* factors indicates the necessity of future research in this area since current research has shown only mixed and ambiguous results. Furthermore, the unity of both aspects in the same framework sets a milestone in INV research by enhancing the scope of factors taken into consideration when researching the internationalization of start-ups. Although not focusing on the interactions between *Heritage* and *Strategic Moves*, the Start-up Internationalization Framework in its entirety provides the first comprehensive framework for start-up internationalization and a basis for future research that aims to investigate global start-up expansion holistically.

Closing the two research gaps enables researchers to distinguish more precisely between factors of *Heritage* and *Strategic Moves* of born globals and early internationalizing start-ups. Closing the gap advances the understanding about the *Heritage* factors of start-ups, provides the first results on the ideal *Strategic Moves* for start-up internationalization, and shows the first comprehensive framework for start-up internationalization. With that, the focus of INV research is shifted, accordingly from pre-internalization topics such as the *Heritage* to during-internationalization topics such as the *Strategic Moves*.

## 6.3. Managerial implications

The established framework has several implications for start-up executives. Finding that the internationalization performance of start-ups depends on selected factors of *Heritage* and *Strategic Moves* suggests that founders and start-up top-management should internalize this two-fold perspective. Therefore, they need to look ahead and plan properly from the very beginning. That is, it is crucial for founders to anticipate the future internationalizing endeavors and place the young organization in an environmental and industry setting that enhances the expected internationalization performance.

When looking at the *Heritage* side, my findings imply to establish the start-up in or change to a country with enough venture capital to finance the internationalization endeavor and good ICT and mobility infrastructure conditions. These are often developed countries such as the U.S. and Canada in North America; countries in the European Union; or Japan, South-Korea, or China in Asia. Additionally, market research in the pre-seed stage should focus on the international level of the industry and the competition. When segmenting the industry and analyzing customers, these factors need to guide the decision-making process. Additionally, founders should gain the necessary experience, follow the adequate business strategy, and build up the crucial capabilities laid out in the Start-up Internationalization Framework. The international and industry-specific experience can be gained during exchange semesters and industry-specific courses while being enrolled at university or with the help of office exchanges during work. This also indicates that founders should found a start-up within the industry they work in. The selection of a differentiation or niche strategy, as well as the capability development, is something that needs to be set up when establishing the business model and reconfigured throughout the market entry. An important capability that needs to be highlighted is the firm's network; therefore, the early development of an international network with the help of business partners, investors, customers, and among others should be prioritized before internationalizing. This can be best done by partnering with potential investors and other co-founders, tight collaboration with suppliers and customers, and horizontal allying with competitors and firms from related industries (Vesalainen & Hakala, 2014).

For the *Strategic Moves*, one of the most striking findings from this study is that, separate from the business model or the industry segment, there are clear best practices for early internationalizing start-ups to follow. These are the *Strategic Moves* listed in the Start-up Internationalization Framework since they lead to higher internationalization performance. Start-up executives need, therefore, to take into account the psychological distance toward host countries and balance it with economic factors. Early internationalizing start-ups from Germany typically internationalize toward France and the U.K. since these two types of factors are ideal for these countries.

Furthermore, executives need to prepare for entering host markets with equity modes and the greenfield investment approach. These two *Strategic Moves* are slower and more costly than their alternatives and this needs to be accounted for in the planning. In my findings also indicate that start-up executives need to be comfortable with high-risk and high-commitment moves when internationalizing. Additionally, the Chief Operating Officer needs to pay special attention to finding country directors, managing expat movements and reorganizing the organizational structure.

For the global management activities, the C-level must decide whether a global or a multidomestic strategy is ideal for the start-up and configure the value chain activities, products, and knowledge transfer according to the Start-up Inter-

nationalization Framework. For fast growing start-ups, correctly determining these moves is not easily doable because the operational performance has the highest priority. These moves, however, require timely top-management attention and many strategic discussions. Often, start-ups do not determine a clear international strategy and only do tactical, situational knowledge transfer. To avoid these mistakes and make sure that the internationalizing start-up has a clear strategic direction, these *Strategic Moves* must be well thought out, the necessary systems must be put in place, and the strategies must be communicated to the entire organization, especially to the middle management. By way of example, the global integration within the global strategy and of value chain activities is achieved through people- and information-based means such as exchange events and many interactions instead of formalization- and centralization-based means such as processes and hierarchies (K. Kim, Park, & Prescott, 2003). To this end, employees need to be sensitized to the importance of integration and incentivized to share or receive the know-how (Cruz, Pérez, & Cantero, 2009; Wilkesmann & Wilkesmann, 2011). If the management agrees on this international strategy, there is a cascade of subsequent activities that need to be implemented.

While it is still necessary to adapt these best practices to the situation the start-up is in, the finding on the *Strategic Moves* nonetheless provide a starting point for strategic discussion in a start-up's top-management meeting. Moreover, the findings give founders direction concerning the kind of support to ask from their investors when internationalizing since investors have an overview of best practices from their portfolio companies. Best practices to ask for from investors can be the selection of host markets, the search for country directors for the foreign equity modes, and the selection of the one-dimensional strategy.

### 6.4. Limitations and directions for future research

This work also has some limitations. Concerning the results and discussion of the findings presented so far, it is important to bear in mind the exploratory nature of the thesis and the accompanying limitations.

While the key informant approach secures a high data source reliability, it must be noted that only 24 out of the 51 start-ups finished their internationalization. The other 27 start-ups needed to rely on internal forecasts and strategies to respond to the questionnaire.

Regarding the measurement, the reliability of the performance variable is limited. It is acknowledged that those objective measures such as financial data are difficult to obtain from start-ups, so I collected subjective data on hard and soft factors for performance. Since not all 51 start-ups could indicate this, but only the ones that had already finished internationalizing, I had to use the subjective measure of the overall performance, which is the least reliable measure for the regression analyses. Additionally, the literature constructs used for the questionnaire have not been used for INV research yet and therefore no quantitatively validated measures could have been selected.

For the analyses, the regressions have not been computed together within the same regression model but rather individually due to the small sample size of 51 start-ups. As already mentioned, while all variables have been used for the regressions, as presented in the results and incorporated in the model for discussion, not all variables have been proven to be appropriate for these analyses. As already mentioned, some variables did not have the prerequired normal distribution for the regression analyses conducted. However, this does not have a severe impact since the OLS method in the regression analyses is resistant to not normally distributed variables, according to Cohen (2013). Furthermore, during the analyses, the interactions between the *Heritage* and the *Strategic Moves* aspects have not been taken into consideration, although the *Heritage* aspects define the option space for the *Strategic Moves* and might influence the selection.

The study results and the Start-up Internationalization Framework must be considered with caution because they are industry- and business model-agnostic. The generalized results do not provide reliable insights for start-ups that differ greatly from the average in the sample. Moreover, the results are not complete because not all possible alternatives have been investigated or did not yield significant results. For instance, when looking at the operating modes, the non-equity modes have not been investigated; and when looking at the entry types, the market entry following the acquisition approach did not yield significant results. Additionally, the results of the study and most of the results of the literature review refer to start-ups from developed countries such as Western and Central European countries and the U.S. The results, therefore, have only limited implications for start-ups from developing or transitioning countries. For the greenfield approach specifically, the regression results did not support the hypotheses any longer when the control variable was included, requiring that this insight to be viewed with caution.

To tackle the stated limitations, future research should focus on some specific topics. The increasing importance of start-ups for worldwide economic and technological growth requires more focus on their performance optimization (Baumol & Strom, 2007). A major aspect of this optimization is the ideal configuration of their internationalization plans. My work presents a first holistic picture of the main determinants of internationalization performance of early internationalizing start-ups. Now, future research needs to broaden and deepen the understanding of the aspects within the Start-up Internationalization Framework.

The aspects of the framework can be broadened by investigating the same topics in this work for born globals instead of for early internationalizing start-ups. The circumstances differ considerably since born globals have internationalization-ready characteristics and face much more uncertainty than early internationalizing start-ups (Madsen, 2013). The aspects of the framework can also be broadened by deriving insights from specific industries and specific business models that are analyzed in the same model. The automotive industry differs considerably from the FMCG industries, and SaaS business models differ from platform models or e-commerce models. In addition to that, the aspects can be deepened if they are singularly selected and research so as to gain an extensive understanding of each *Strategic Move*.

The study itself can be duplicated with a higher number of start-ups to have more robust results. Since my analyses could not produce significant results for all stated hypotheses, these hypotheses could be reinvestigated to be included in a further developed Start-up Internationalization Framework. Furthermore, new hypotheses can be added that have been left out in my study such as the effect of non-equity modes or IJVs on internationalization performance. Additionally, the start-ups could be founded not only in Europe but around the world since start-ups from emerging countries differ much in their *Heritage* and in the viable *Strategic Moves*.

Furthermore, the Start-up Internationalization Framework considers a start-up's *Heritage* and its *Strategic Moves* as well as the single *Strategic Moves* independently. According to prior literature (e.g., Zahra, 2005), this is not accurate since the *Heritage* has significant influence on the optimal choice of *Strategic Moves*. Additionally, certain *Strategic Moves* affect other *Strategic Moves*. For instance, the international strategy affects which market entry activities are ideal (Harzing, 2002). These interdependencies need to be addressed.

At last, although the Start-up Internationalization Framework shows a holistic picture it, falls short of showing the relative importance of all *Heritage* and *Strategic Moves* aspects. Future research could create regression models including all aspects and determine their relative importance so as to enable founders to focus even more on the most impactful moves. This will allow researchers to correctly prioritize future research and to weight the importance of the aspects in my framework. Special attention could be paid to the international expansion planning activities. The investigation of this category did not yield many results, raising questions about its importance.

## 7. Conclusion

Founders are the inventors and innovators that shape the global economic progress and international new ventures are the chief vehicles for it. An extensive body of literature has made tremendous progress in understanding what creates INVs and how their *Heritage* influences their chance to win when going global. My work expands existing research by adding the start-ups' *Strategic Moves* to the equation of successful internationalization. It does so, with the help of the established Start-up Internationalization Framework, on the one hand, to set the course for future research toward a more holistic and strategy-centered perspective on start-up internationalization. On the other hand, the aim is to equip founders and INV executives with a strategy concept for top-management discussions. However, before reaching the same level of maturity that the MNE literature has already

reached, much more work must be done in the INV research field. For now, this thesis will enable early internationalizing start-ups to win when going global and to accelerate progress in the world.

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