Financial Managers’ Psychological Ownership
– Three Essays on (its) Antecedents and Consequences –

DISSERTATION

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vorgelegt von

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Experiencing feelings of ownership (psychological ownership) towards one's work can be a rewarding journey, motivating the owner to go the extra mile in improving his/her work and achieving his/her goals. At the same time, psychological ownership provides the motivation needed for accomplishing difficult tasks when one is struggling. In this way, psychological ownership supports the development of the right level of perseverance, resilience and engagement required by journeys such as doctoral endeavors.

During my doctoral journey I was fortunate to receive guidance from some mentors and several individuals to whom I want to express my deep gratitude. First of all, special thanks go to Prof. Dr. Martin Hiebl, my doctoral supervisor, who afford me the opportunity of pursuing my doctoral studies during my employment at his chair of Management Accounting and Control at the University of Siegen and later on as lecturer at the HRW, University of Applied Sciences. He guided and encouraged me throughout my research and our critical discussions challenged me to continuously improve my work. I am grateful for his willingness to share his experiences, knowledge and thoughts. Furthermore, his provision of insights regarding scientific work and the publication process was of great value in advancing the scientific development of the essays included in this dissertation. Personally, looking back to my doctoral journey and Prof. Dr. Martin Hiebl's mentorship, it was him who has shaped my understanding of academic work. As will be seen in Section B and C of this dissertation, he provided me with the right levels of autonomy and involvement that were necessary for developing ownership feelings for my doctoral work.

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List of Abbreviations

AC	agency culture
AVE	average variance extracted
AUTO	autonomy
CEO	Chief Executive Officer
CFO	Chief Financial Officer
cf.	confer
CR	composite reliability
DataColl	round of data collection
ENTR	entrepreneurial behavior
et al.	et alii
HTMT	heterotrait-monotrait ratio
i.e.	id est
INVOLV_C	content-related involvement in strategy development
INVOLV_P	process-related involvement in strategy development
JUST	organizational justice
JUST_D	distributive justice
JUST_HOC	organizational justice (higher order construct)
JUST_INF	informational justice
JUST_IP	interpersonal justice
JUST_P	procedural justice
Max.	maximum
Min.	minimum
p.	page

PDF	Portable Document Format
PLS	partial least squares
PO	psychological ownership
pp.	pages
SEM	structural equation modelling
SME	small and medium sized enterprises
SPSS	Statistical Package for the Social Science
Std. dev.	standard deviation
TEN	tenure
VentCap	venture capital
VIF	variance inflation factor(s)

A. Introduction

A.1 Motivation of the Research Topic and Research Model

A.1.1 Relevance of Research on Psychological Ownership

"Psychological ownership – a feeling on the part of the employees that they have a responsibility to make decisions that are in the long-term interest of the company"

(O'Reilly, 2009, p. 19).

In recent decades, the organizational and work environment has undergone significant changes due to various factors, including globalization, increased competition, digitalization, the development of artificial intelligence, as well as the financial crisis and the Covid-19 pandemic (Braganza et al., 2021; Kossek et al., 2012; Kraus et al., 2023; Malhotra, 2021; Rousseau, 1998; Santana and Cobo, 2020; Schermuly, 2021). These developments have created an environment that could be described as volatile, uncertain, complex, and ambiguous, which may pose challenges for both organizations and employees (Schermuly, 2021). In this evolving landscape, employees' work environment and organizations' success will depend on the adaptive responses of employees and organizations to these challenges (Kraus et al., 2023). This in mind, two diverging tendencies are emergent: on the one hand, companies that are increasingly reliant on their key personnel in order to remain competitive; on the other hand, as a result of changing work conditions, employees that are more and more distancing themselves from their employing company.

For example, due to the aforementioned developments, technical and economic complexity has risen, business processes have become more dynamic and integrated, and markets have become international (Bernhard, 2011). Thus, economic pressures have considerably risen, creating a more and more competitive environment. Although some companies are downsizing, pushing employees into short-term contracts or outsourcing them to private agencies to cut costs and to increase profitability in response to growing global competition (Bernhard, 2011; Cavanaugh and Noe, 1999; Rousseau, 1998), it is well acknowledged that the success of an organization increasingly depends on its key employees (Coyle-Shapiro and Shore, 2007; Herrera and Heras-Rosas, 2021; Riketta and van Dick, 2004; Rousseau, 1998; Santana and Cobo, 2020; Schermuly, 2021). Thus, modern organizations, "where focus shifts from production to intangible-, knowledge- and creativity-intensive, service-sector oriented businesses, face heightened dependency on motivated organizational members as key factor for success"

(Bernhard, 2011, p. 3; cf. Kraus et al., 2023; Schermuly, 2021). Moreover, dealing with the challenges of a volatile, uncertain, complex and ambiguous environment, amongst others, may require flat hierarchies, decentralized organizational structures and high connectivity (Bernhard, 2011; Malhotra, 2021; Schermuly, 2021), which in turn require personnel responsibility of and a strong bond between employees and their employer (Meyer et al., 2008). These organizational changing to the evolving business environment may also affect the work environment of employees, which is captured by e.g., the concepts of 'future of work' and the 'new psychological contract'.

While the 'future of work' (Kraus et al., 2023; Malhotra, 2021) deals with work designs regarding the aforementioned developments (e.g., digitalization or hybrid/remote work as consequence of the Covid-19 pandemic), the 'new psychological contract' describes employees' perceptions regarding their employee-organization-relationship (Braganza et al., 2021; Cavanaugh and Noe, 1999). For example, artificial intelligence and machines may take over routine tasks, resulting in job losses for employees or changing job roles, which in turn requires employees to attain new skills to handle new technologies or nonroutine, creative tasks (Bernhard, 2011; Braganza et al., 2021; Malhotra, 2021; Schermuly, 2021). Additionally, mainly driven by the Covid-19 pandemic, knowledge-based work increasingly will be and is performed remote or hybrid, turning employees into "independent agents" often working outside the organization in virtual and multiple teams across the globe (Malhorta, 2021, p. 1092; cf. Kraus et al., 2023). These exemplarily 'future of work' characteristics and practices are accompanied by an increased delegation of autonomy and responsibility to employees, which are covered by the 'new psychological contract' (Bernhard, 2011; Braganza et al., 2021; Cavanaugh and Noe 1999; Malhotra, 2021; Schermuly, 2021). The 'new psychological contract' defines employee-organization relationships in which long-term employment is of minor importance and in which employees are responsible for their own career development (Cavanaugh and Noe, 1999). One the one hand, the described work environments above could provide opportunities for employees to acquire new competencies and to develop their career. On the other hand, they could also create the pressure for employees to stay flexible and adaptable, while facing the uncertainty of potential job losses when not met (Bernhard, 2011).

As a result, these developments may erode and complicate employees' attachment to their employing company, while also potentially transforming them into independent agents pursuing their own interests in the context of the new psychological contract (Bernhard, 2011; Bagranza et al., 2021; Cavanaugh and Noe, 1999; Malhotra, 2021). As organizations increasingly rely on key employees and their attachment, a critical tension field arises due to the potential decline of two typical forms of employee organizational attachment in such environments: organizational commitment and identification (Baruch, 1998; Cohen, 1993; Feeney et al., 2018; Riketta and van Dick, 2005; Yip et al., 2018). In this context alternative forms of employee attachment might be important to bond independent agents to their employing company.

However, research focusing on how employees (psychologically) bond to their employing organization is far from new. While prior research on organizational attachment examines for example employees' organizational commitment towards or their identification with their employing organization or both (e.g., Feeney et al., 2018; Riketta and van Dick, 2005; Reichers, 1985; Yip et al., 2018), recent studies suggest an additional form of employee attachment to organizations, that is psychological ownership (Zhang et al., 2020). While employee's commitment toward the organization "refers to a positive evaluation of the organization along with a desire to remain a member of the organization", organizational identification refers to "a general perception of belongingness or a link between one's self image and their employer" (Feeney et al., 2020, p. 113). In contrast, psychological ownership is defined as that "state in which individuals feel as though the target of ownership or a piece of that target is "theirs" (i.e., "It is mine!")", and thus describes what becomes part of ones extended self (Pierce et al., 2003, p. 86). Thereby, psychological ownership might allow independent agents to turn into psychological principals (Sieger et al., 2013). Although commitment, identification, and psychological ownership are similar in that they describe how employees psychologically bond to their employing organization, they are distinct regarding their conceptual core and their motivational basis (Pierce et al., 2001). While employee's commitment and identification have been extensively studied (for overviews see Ashforth et al., 2008; Riketta and van Dick, 2005; Sidorenkov et al., 2023; Yip et al., 2008), scholarly interest in the emerging construct of psychological ownership has increased over the last thirty years (Dawkins et al., 2017; Kim et al., 2023; Renz and Posthuma, 2022; Zhang et al., 2021).

Organizations are likely to be interested in developing their employees' psychological sense of ownership in order to strengthen their bonds with their employer, but also because feelings of ownership can lead to pro-organizational and work-related perceptions, attitudes and behaviors (Dawkins et al., 2017; Zhang et al., 2021). For example, with regard to the outcomes of psychological ownership, prior research has identified its positive effects on attitudes such as job satisfaction, work engagement, and organization-based self-esteem (Liu et al., 2012; Peng and Pierce, 2015; Ramos et al., 2014; Sieger et al., 2011; Van Dyne and Pierce, 2004), pro-organizational behaviors such as knowledge sharing, stewardship, and voice behavior (Han et al., 2010; Henssen and Koiranen, 2021; Henssen et al., 2014; Mayhew et al., 2007; O'Driscoll et al., 2006; Peng and Pierce, 2015), as well as other outcomes such as its negative relation to employee burnout (Kaur et al., 2013). Nonetheless, little is known about the boundary conditions that may moderate the relationship between psychological ownership and its outcomes (Dawkins et al., 2017). This raises the question regarding the circumstances under which psychological ownership might have stronger or weaker effects on its outcomes.

Due to these various pro-organizational outcomes, companies might engage in factors and mechanisms that allow their employees to develop, enhance and/or foster their psychological ownership. In this vein, numerous studies have examined the antecedents of psychological ownership. Amongst others, prior research has identified employee's participation in decision-making (Chi and Han, 2008; Liu et al., 2012), the provision of stock ownership and profit-sharing (Chi and Han, 2008; Chiu et al., 2007), the degree of autonomy (Henssen et al., 2014; Mayhew et al., 2007), or the role of organizational leaders (Avey et al., 2012; Bernhard and O'Driscoll, 2011) as predictors of psychological ownership. However, like on the outcome side, little is known about the boundary conditions under which such predictors might create stronger or weaker ownership feelings. Additionally, as several of these predictors could coexist within an organization, they might interact with each other (Pierce et al., 2003, 2001). Yet, little is known about the potential interplay between these different factors.

This dissertation aims to address these shortcomings, by (1) examining selected boundary conditions that affect the emergence of behavioral consequences resulting of feelings of ownership, by (2) shedding light on the interplay between different predictors of psychological ownership, and (3) by explaining how the relationship between certain predictors and outcomes of psychological ownership works.

A.1.2 Relevance of Research on Financial Managers

From the perspective of psychological ownership, agency theory, and upper echelons, financial managers could be classified as key employees and are of particular interest for this dissertation for the following reasons.

As indicated above, retaining key employees and support them to foster a strong bond to their employer is crucial for companies that want to remain competitive in a volatile, uncertain, complex, and ambiguous business environment. Psychologically bonding financial managers to their employer is thus critical, as their influence in shaping and executing strategy has risen in recent years (Caglio et al., 2018; Indjejikian and Matějka, 2009), and thus (depending e.g., on firm size or legal form) financial managers may have "varied roles characterized by different levels of financial expertise and CEO-likeness"[1] (Caglio et al., 2018, p. 265; cf. Hiebl, 2015; Mian, 2001; van Doorn et al., 2023). For example, due to their fiduciary responsibility they are accountable for their company's financial statements and for a fair representation of its financial conditions. At the same time, they might receive bonuses based on their company's financial performance, which may be influenced by the financial managers themselves (Indjejikian and Matějka, 2009). This opens up the possibility that the figures may have been manipulated for self-interest, such as high remuneration, which could ultimately harm the company in the long term (Hiebl, 2015; Shleifer and Vishny, 1997). Additionally, if financial managers are not part of the top management, but rather in the middle management (van Doorn et al., 2023), this might cause further agency conflicts and the predominance of their personal interests (Coyle-Shapiro and Shore, 2007; Hallier and James, 1997). That is, due to the middle management position to be both, an employee of the organization as well as representing the employer organization towards its subordinates, this position faces the threat of conflicting interests between the financial managers employers' interests, the interests of the financial managers as a representative of its employer organization to its subordinates, and the financial managers' own personal interests (Coyle-Shapiro and Shore, 2007; Hallier and James, 1997). In consequence, financial managers have to leverage the tensions arising from their different roles and responsibilities, which typically expose them to agency conflicts (Hiebl, 2015; Indjejikian and Matějka, 2009) and thus makes them vulnerable to self-interested behavior rather than pro-organizational behavior. Due to the varied roles of (middle) financial managers, potential role conflicts, and at the same time high influence on strategy development and implementation, Mian et al. (2001) and van Dorrn et al. (2023) call for more research focusing on individual-level managers personal characteristics such as their psychological ownership. This dissertation is set do address these calls, by examining financial managers' psychological ownership, as well as specific antecedents and outcomes that might be especially relevant and applicable to financial managers' position and role.

To summarize, prior research on psychological ownership as well as research on financial managers and their roles feature some shortcomings that warrant further investigation. Thus,

[1] CEO refers to the chief executive officer.

this dissertation aims to contribute to current knowledge by addressing the following research question:

How can firms contribute to the development of their financial managers' psychological ownership to enhance their pro-organizational behavior?

This dissertation is divided into three separate research studies (essays), each contributing to either the antecedent side or outcome side of psychological ownership or both, as it is covered by this dissertations' overall research question. Essay 1 and Essay 2 focus on the antecedents of psychological ownership and will shed light on work design elements that allow for the development of psychological ownership of financial managers. Additionally, extending the core ideas of upper echelons theory to financial managers – that the organization is a reflection of its top managers and that organizational outcomes are affected by individual managers personnel characteristics and behaviors (Hambrick and Mason, 1984; Hiebl, 2014) – Essay 2 and Essay 3 more closely investigate financial managers' experience of psychological ownership (as a personal characteristic) and how it affects their behavior. Although analyzing organizational outcomes as consequence of financial mangers' personal characteristics is beyond the scope of this dissertation, it is acknowledged that their achievement depends on individual-level outcomes, such as financial mangers' behavior, first (Hutzschenreuter and Kleindienst, 2006). Thus, Essay 2 and Essay 3 examine in more detail financial managers' behavioral responses to their ownership feelings.

The following subsection provides a brief overview of the three essays included in this dissertation. Due to the varied roles and hierarchical position of financial managers and the specific scope of the respective essays, we refer to them either as financial managers (Essay 1), middle managers (Essay 2), or more generally as employees (Essay 3) throughout this dissertation.

A.2 Included Research Papers and Research Questions

A.2.1 Essay 1: A Complementarity Perspective on the ‘Roots’ of and ‘Routes’ to Psychological Ownership: The Interplay between Financial Managers’ Autonomy, Organizational Tenure, and Perceived Justice

An ongoing debate in literature is concerned with the theoretical foundation of psychological ownership (cf. Dawkins et al., 2017). Prior research indicates that psychological ownership emerges (in financial managers) due to the following experiences: (1) the exercise of control, (2) gaining intimate knowledge over the ownership target, and (3) investing their selves into the ownership target (Pierce et al., 2003, 2001). These are the so called ‘routes’ to psychological ownership, explaining *how* ownership feelings emerge (Pierce et al., 2003, 2001). Besides the ‘routes’ to psychological ownership, there remain the so called ‘roots’ of psychological ownership which explain, *why* financial managers develop ownership feelings. The latter refer to the motives that are served by feelings of ownership, that is: (1) efficacy and effectance, (2) sef-identiy, and (3) having a place (Pierce et al., 2003, 2001).

Most research on the antecedents of psychological ownership has focused on single job/work-related factors or the supervisor’s leadership style in promoting employees’ ownership feelings (for overviews, see Dawkins et al., 2017; Zhang et al., 2021). As outlined in the introduction (Section A.1.1), these factors do not exist separately nor work in isolation from one another, but can coexist in organizations. Although Hackman and Oldham (1975) and Pierce et al. (2003, 2001) suggest an additive or complementary relationship between work- and job-related factors, there is a lack of research regarding the interplay between different predictors incorporating the ‘roots’ of and ‘routes’ to psychological ownership and may jointly contribute to its emergence. To the best of my knowledge, no research has been conducted to date on how different antecedents of psychological ownership interact with each other and how this interaction might affect the development of ownership feelings. Thus, Essay 1, investigates the potential interactions among three well-known antecedents of psychological ownership and how their interplay might affect the emergence of financial mangers’ ownership feelings. To achieve this, it is first necessary to operationalize the ‘roots’ of and ‘routes’ to psychological ownership in concrete job- and work-related factors. Based on prior research, the ‘having control’ route is operationalized by financial managers’ autonomy, the ‘intimate knowledge’ route by the length of their organizational tenure, and the ‘having a place’ root by their perceptions of organizational justice. Applying complementarity theory and the pay-off function approach then allows for the investigation whether financial managers’ autonomy, their organizational tenure and justice perception reinforce each other regarding the emergence of psychological ownership. To summarize, Essay 1 addresses the following central research question:

Research question 1: Are financial managers' autonomy, as a reflection of the 'having control' route, their tenure within the company, as a reflection of the 'intimate knowledge' route, and their perception of organizational justice, as a reflection of the 'having a place' root, complements with regard to their effects on psychological ownership?

In doing so, Essay 1, primarily contributes to the understanding of the theoretical foundation of psychological ownership. Essay 1 is elaborated in Section B in more detail.

A.2.2 Essay 2: How to Evoke Entrepreneurial Behavior in Middle Managers: Involve them in Strategy Development and Create Psychological Ownership

As stated in the introduction, organizations have to rely heavily on key employees, such as financial managers, to achieve and maintain success in an environment characterized by globalization, digitalization, and increasing competition (Coyle-Shapiro and Shore, 2007; Herrera and Heras-Rosas, 2021; Riketta and van Dick, 2005; Rousseau, 1998; Santana and Cobo, 2020; Schermuly, 2021). That is, to achieve competitiveness, organizations need to engage in opportunity recognition, innovation, creativity and exploitation at the firm level (Coyle-Shaprio and Shore, 2007; de Massis et al., 2021). These endeavors are mainly driven by the entrepreneurial behavior of key employees at the individual level (Cooper, 2007; de Jong et al., 2015; Hornsby et al., 1999; Kellermanns et al., 2008; Pryor et al., 2015). Moreover, the aforementioned changes in the business environment are challenging the ability of senior executives to render strategic decision on their own. As a consequence, financial managers are increasingly involved in organizational decision making and strategy development (Schuler et al., 2023; Splitter et al., 2023; Wang et al., 2022). However, little is known on how such involvement might affect their entrepreneurial actions. In this vein, Essay 2 investigates more closely how middle managers' involvement in strategy development could enhance their entrepreneurial behavior. Consequently, Essay 2 addresses the following research question:

Research question 2: Is middle managers' involvement in strategy development associated with their entrepreneurial behavior?

Prior research critically discusses how financial managers could best contribute to strategy development and thus often distinguishes between their content-related involvement (e.g., participation in strategic decision making) and process-related involvement in strategy development (e.g., delivering technical support regarding the strategy development process) (Erhart et al., 2017; Pasch, 2019, Wolf and Floyd, 2017). Thereby, it is suggested that financial managers' participation in strategic affairs could affect and change their perception of the environment and their behavior (Collier et al., 2004; Hutzschenreuter and Kleindienst, 2006).While prior research has examined the effect of several organizational factors such as autonomy and job/work-related factors such as participation and job design on managers entrepreneurial behavior (Kuratko et al., 200a, 2005b; Rigeting and Weitzel, 2013), it is still unclear, how factors such as content- and process-related involvement in strategy development differ in their effect on financial managers' entrepreneurial behavior. Thus, Essay 2 additionally addresses the following research question:

Research question 3: How do different dimensions of middle managers' involvement in strategy development (i.e., content- and process-related involvement) affect their entrepreneurial behavior?

Previous research on the emergence of entrepreneurial behavior among employees has often focused solely on the existence of organizational and work-/job-related factors, as well as employees' perceptions of them (Hornsby et al., 2009; Kuratko et al., 2005a, 2005b, 2004). However, I argue that this model may be insufficient for explaining the development of entrepreneurial actions at the individual level. Prior research suggests that feelings of ownership towards the company may be a key determinant in encouraging pro-organizational behavior (Kollmann et al., 2020; Mustafa et al., 2018; Sieger et al., 2013; van Dyne and Pierce, 2004). This may also apply to the entrepreneurial behavior of financial managers. Therefore, Essay 2 will additionally address the following research question:

Research question 4: Does psychological ownership mediate the relationship between middle managers involvement in strategy development and their entrepreneurial behavior?

While Essay 2 examines two so far unknown antecedents of psychological ownership, namely financial managers' content- and process-related involvement in strategy development, it also examines if psychological ownership mediates the relationship between involvement in strategy development and financial mangers' entrepreneurial behavior. Thus, Essay 2 is set to explain *how* the relationship between antecedents and outcomes of psychological ownership works. Note that in Essay 2 I will refer to financial managers as middle managers.

A.2.3 Essay 3: Psychological Ownership and Stewardship Behavior: The Moderating Role of Agency Culture

In addition to Essays 1 and 2, Essay 3 investigates the boundary conditions under which psychological ownership might affect pro-organizational outcomes. In detail, Essay 3 investigates how financial managers' perception of an agency culture could affect the translation of their ownership feelings into their stewardship behavior.

During the last twenty years, research on psychological ownership has extensively analyzed its numerous antecedents and outcomes, so far mostly neglecting factors that could explain situations in which ownership feelings will have stronger or weaker effects on pro-organizational outcomes, such as stewardship behavior (Dawkins et al., 2017; Renz and Posthuma, 2022). For example, prior research in business and management (e.g., Brown et al., 2021; Henssen et al., 2014; Lee and Yoo, 2021) or with regard to public goods (e.g., Bae et al., 2023; Kirk and Rifkin, 2021; Peck et al., 2021), indicates that psychological ownership is positively and significantly related to stewardship behavior. However, apart from the study by Brown et al. (2021), none of these studies places the emergence of stewardship behavior in a broader context. That is somewhat surprising as, although stewardship and agency theory are often viewed as opposing concepts, it is widely acknowledged that notions of both could coexist in organizations (Caers et al., 2006; Chrisman et al., 2007; Corbetta and Salvato, 2004; Madison et al., 2017, 2016). Following the principal-manager choice model by Davis et al. (1997) as well as Davis et al. (2010) and Hernandez (2012), constellations in which companies' corporate governance mechanism are agency-oriented and in which financial managers' personality traits are stewardship-oriented, might hinder the development of financial managers' stewardship behavior. It could thus be argued that psychological ownership does not always translate into stewardship behavior and that this translation might depend on the (mis-)alignment of organizations' agency-related corporate governance mechanisms (e.g., monitoring, cf. Sieger et al., 2013) and financial managers' personality traits. Moreover, previous studies show that managers' attitudinal and behavioral responses to psychological ownership could be affected by factors such as organizational culture and organizational climate in more general (Mayhew et al., 2007; Ramos et al., 2014). Thus, also implicit agency-related factors, such as financial managers' perceptions of a prevailing agency culture, might affect their stewardship behavior as a result of their ownership feelings. For the above-mentioned reasons, Essay 3 addresses the following research question:

Research question 5: How does the perception of an agency culture affect the translation of employees' psychological ownership into stewardship behavior?

In doing so, the findings derived by Essay 3 provide a more fine-grained understanding of the boundary conditions under which psychological ownership unfolds its pro-organizational outcomes, at least partially with regard to the interplay of agency and stewardship characteristics at the individual and firm level. In Essay 3, which is elaborated in Section D in detail, we refer to financial managers as employees in more general.

Table A-1 provides a detailed overview of the three research essays included in this dissertation regarding their research questions, their methodology and their current status.

Table A-1. Overview of the research papers included in this dissertation

	Essay 1 (Chapter B)	**Essay 2 (Chapter C)**	**Essay 3 (Chapter D)**
Title	A complementarity perspective on the ‘roots’ of and ‘routes’ to psychological ownership: The interplay between financial managers’ autonomy, organizational tenure, and perceived justice	How to evoke entrepreneurial behavior in middle managers: Involve them in strategy development and create psychological ownership	Psychological ownership and stewardship behavior: The moderating role of agency culture
Authors	Feldermann, S.K., Derfuss, K.G.K.W., Hiebl, M.R.W.	Feldermann, S.K., Hiebl, M.R.W.	Feldermann, S.K., Hiebl, M.R.W.
Research Question(s)	Are financial managers’ autonomy, as a reflection of the ‘having control’ route, their tenure within the company, as a reflection of the ‘intimate knowledge’ route, and their perception of organizational justice, as a reflection of the ‘having a place’ root, complements with regard to their effects on psychological ownership?	Is middle managers’ involvement in strategy development associated with their entrepreneurial behavior? How do different dimensions of middle managers’ involvement in strategy development (i.e., content- and process-related involvement) affect their entrepreneurial behavior? Does psychological ownership mediate the relationship between middle managers involvement in strategy development and their entrepreneurial behavior?	How does the perception of an agency culture affect the translation of employees’ psychological ownership into stewardship behavior?

Methodology and Sample	Quantitative: Surveying financial managers of non-listed German companies between 2018 and 2019. Receiving 233 fully or partially completed questionnaires, resulting in a final sample of 88 cases with full information on the variables of interest in this study.	Quantitative: Surveying financial managers of non-listed German companies between 2018 and 2019. Receiving 233 fully or partially completed questionnaires, resulting in a final sample of 176 cases with full information on the variables of interest in this study.	Quantitative: Surveying financial managers of non-listed German companies between 2018 and 2019. Receiving 233 fully or partially completed questionnaires, resulting in a final sample of 129 cases with full information on the variables of interest in this study.
Status	a) Accepted for presentation at the Manufacturing & Service Accounting Research Conference, 2024. b) Presented at the Annual Conference for Management Accounting Research (ACMAR) 2024. c) Previous versions of this paper have been presented at the International Family Enterprise Research Academy Conference (IFERA), 2019, at the Konferenz der deutschsprachigen Forschungszentren und Institute für Familienunternehmen (FiFu), 2019, and at the International Doctoral Mini-Conference, 2018.	a) Presented at European Academy of Management Conference (EURAM) 2023. b) Submitted to *Journal of Business Research* (VHB-JOURQUAL3: B): under review.	a) Previous versions of this paper have been presented at the European Academy of Management Conference (EURAM), 2020, and at the Annual Interdisciplinary Conference on Entrepreneurship, Innovation and SMEs (G-Forum), 2019. b) Published in *Scandinavian Journal of Management* (VHB-JOURQUAL3: B).

A.3 Methodology and Structure

The essays included in this dissertation follow a quantitative approach to address the research questions outlined above. Thus, a survey was conducted among financial managers in German companies that employed more than 10 employees, were non-listed and were not part of the financial services industry.

Although we have addressed the highest ranked financial managers in our survey, this position does not automatically induce the hierarchical level of the beholders within the organization (Hiebl, 2014; Mian, 2001). Prior research indicates that the hierarchical level of the financial manager position may vary among organizations (Mian, 2001; van Doorn et al., 2023). Thus, depending on factors such as legal form or firm size, the responding 'highest ranked financial managers' were either chief financial officers, financial managers, the heads of accounting/controlling or controllers. As a result, and contingent on the focus of the respective essays, we refer to them either as financial managers (e.g., Essay 1; cf. Weigel et al., 2023), middle managers (e.g., Essay 2; cf. van Doorn et al, 2023), or more generally as employees (e.g., Essay 3).

Small enterprises with less than 10 employees were excluded from our sample as they typically do not employ professional managers such as financial managers (Bendickson et al., 2016; Lavia Lopez and Hiebl, 2015). Furthermore, we excluded listed companies and those belonging to the financial services industry from the sample as stock ownership among salaried managers is more common in such firms (Kuvvas, 2003). This was done to avoid any potential impact of formal ownership on psychological ownership, which is the main variable of interest in all three essays (Chi & Han, 2010). Studying financial managers in this vein also seems valuable as they typically do not hold ownership shares in privately-held firms (Hiebl, 2015; Indjejikian and Matějka, 2009).

The aforementioned selection criteria were used to purchase archival data (e.g., company size and industry affiliation) from Germany's largest professional financial data and address provider. This information was used to collect the contact details of the companies and the financial managers of these companies. Data collection took place in two waves between March 2018 and July 2019. In accordance with recent recommendations on survey research, in the first round of data collection we established a pre-contact to the financial managers by telephone or email and invited them to participate in our survey (Chidlow et al., 2015; Dillmann et al., 2014; Hiebl and Richter, 2018). To those financial managers who agreed to participate, we sent the questionnaire as Portable Document Format (PDF) to fill out and return to us. During the first round of data collection 167 responses were generated. To increase the number of responses, a second round of data collection was initiated. A professional market research agency was employed to approach companies and financial managers who were not reached in the first wave of data collection. The second round of data collection yielded an additional 66 responses, resulting in a total of 233 fully or partially completed questionnaires.

The analyses in this dissertation are based on different samples due to varying focal points and variables of interest in the three essays. These samples were selected from the total of 233 received questionnaires, all stemming from the same dataset. Therefore, the explanations regarding data selection and sampling apply equally to all three essays.

To reach respondents, we have mostly relied on general email addresses (e.g., office@firm.de) rather than financial managers' personal email addresses. This makes it difficult to determine the exact number of financial managers who received our survey invitation (Rogelberg et al., 2000). Thus, I am unable to calculate an accurate response rate. However, calculating and achieving a reliable response rate for my analyses seems to be of negligible importance. That is, for studies that intend to test theoretical relations between variables of interests rather than to reach statistical generalizability "it is only necessary that the sample is relevant to the group of subjects the theory is supposed to apply to, e.g., the target population" (Specklé and Widener, 2018, p. 4) – which in this dissertation is the financial manager in privately-held firms.

The survey relied on a single respondent approach, which is widely used in research on employee behavior (Rogelberg et al., 2000; von Rosenstiel, 2011). This approach allows for the generation of larger sample sizes (Krause et al., 2018; Kull et al., 2018), which is particularly useful in light of declining response rates in survey research (Rogelberg et al., 2000).

Although this approach may be affected by common method variance (Flynn et al., 2018; Podsakoff et al., 2003), I have chosen to use a single-respondent approach for the following reasons (Flynn et al., 2018; Krause et al., 2018; Kull et al., 2018). Firstly, as argued by Krause et al. (2018, p. 45) "having multiple respondents is less important than having the right respondent – that is, the key informant". Key informants are individuals that "can provide data about concepts that are experienced by one party" and have "recent firsthand experience in the area, and [are] capable and willing to provide the requested information" (Krause et al., 2018, p. 45, 47). Identifying key informants is crucial when applying a single respondent approach as it aligns the research question with the unit of analysis (Krause et al., 2018). Thus, when the research question refers to an individual's perception, e.g., their feelings of ownership (e.g., Essays 1-3) or their perception of organizational justice (e.g., Essay 1), a single-respondent approach seems suitable (Flynn et al., 2018). Financial managers could be classified as key informants for our research questions as we examine their sense of ownership towards their employing company. This is due to their rising relevance and importance for a company's strategy development (Essay 2), their varying degrees of autonomy (Essay 1), and their potential role as stewards (Essay 3).

Secondly, it is possible to use a single-respondent approach for surveys that rely mostly on monadic constructs. Thus, using a single-respondent is suitable when the key informant who can address these constructs within its area of expertise could be identified (Flynn et al., 2018). Monadic constructs capture an individual decision maker's single perspective or experience, which is often found in behavioral studies. In contrast, polyadic constructs require assessment by two or more parties/sources to avoid bias (Flynn et al., 2018). For example, organizational culture is characterized as a set of shared, collective assumptions, beliefs and values among members of an organization (Gregory et al., 2009; Hartnell et al., 2010). Although the main constructs within this dissertation are monadic, such as psychological ownership, there are a few polyadic constructs (e.g., agency culture in Essay 3). However, according to Flynn et al. (2018), constructs that are polyadic in larger firms, such as agency culture, are more likely to be monadic in smaller firms. Therefore, a single respondent approach may be more suitable for researching small and medium enterprises (SMEs) (Flynn et al., 2018; Kull et al., 2018). Furthermore, it is more probable that a single key informant exists in a small firm where single managers have multiple responsibilities (Flynn et al., 2018, p. 10; Kull et al., 2018). According to the EU Commission's definition of SMEs, referring to companies with less than 250 employees as SMEs, amongst other, 76% of the companies in my sample can be classified as SMEs (EU recommendation 2003/361). Therefore, the single respondent approach may be applicable (Kull et al., 2018). For the above-mentioned reasons, I am confident that a single respondent approach is suitable for my research design, although it might suffer from common method bias.

Thus, I have addressed the risk of common method bias ex ante by designing the questionnaire and its pre-test as well as ex post by applying statistical remedies, such as Harman's single factor test and the marker variable technique. I followed the recommendations by Podsakoff et al. (2003) to mitigate common method bias. (1) First, I have guaranteed the respondents full anonymity and confidentiality, I informed them that there are no right and wrong answers. This could reduce the likelihood of common rater effects, such as social desirability, leniency and acquiescence bias (Podsakoff et al., 2003). (2) Second, I have utilized previously validated measurements for our constructs, which were also pre-tested by financial managers and experienced researchers to ensure the precision and coherence of the scale items. These procedures allow to reduce item ambiguity and to improve scale items (Podsakoff et al., 2003). (3) Third, counterbalancing the question order by psychologically separating the items of the dependent and independent variables allows to “control for priming effects, item-context-induced mood states, and other biases related to the question context or item embeddedness” (Podsakoff et al., 2003, p. 888). (4) Ex post statistical controls, such as Harman’s single factor test and the marker variable technique, were applied in all essays to control for the impact of common method bias on our results (Podsakoff et al., 2003). While Harman’s single factor test investigates whether the majority of the variance is attributable to a single factor (Harman, 1976; Podsakoff and Organ, 1986), the correlational marker variable technique allows for the calculation of the effect of common method bias (Richardson et al., 2009; Simmering et al., 2015). For this, a theoretically unrelated variable (referred to as marker variable) needs to be included into correlation analysis of the variables of interest (Lindell and Whitney, 2001; Podsakoff et al., 2003). Thereby, the smallest absolute correlation between the main variables of interest and the marker variable can then be interpreted as the extent of common method variance (Richardson et al., 2009; Simmering et al., 2015). Neither Harman’s single factor test nor the marker variable technique indicates that common method bias is an issue in any of the essays.

Finally, we have examined the potential impact of non-response bias in our study (Rogelberg et al., 2000). Non-responses may be influenced by organizational characteristics such as firm size, or by respondents’ personal characteristics such as age or education (van der Stede et al., 2015). As I could identify non-responding organizations, their firm size and industry affiliation were compared to those of responding organizations (Bedford et al., 2016; van der Stede et al., 2015; Wasserman, 2006). By means of a Mann-Whitney U test for firm size (measured by number of employees) and the chi-square test for companies’ industry affiliation I could not identify significant differences between respondents and non-respondents. Thus, I have no evidence that the results would be affected by non-response biases.

The reminder of this dissertation is structured as follows: Sections B to D each represent an autonomous research study (Essay 1 to 3). The dissertation concludes with Section E, which includes an overall summary, the theoretical and practical implications and future research avenues. As each essay is intended for separate publication, it is possible that there may be some redundancies regarding theoretical concepts, such as psychological ownership, and methodology. Similar to studies in an edited volume, each Section has its own bibliography.

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B. A Complementarity Perspective on the ‘Roots’ of and ‘Routes’ to Psychological Ownership: The Interplay Between Financial Managers’ Autonomy, Organizational Tenure, and Perceived Justice

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We, the authors of the paper, hereby declare that this paper’s first author, Sina K. Feldermann, was responsible for collecting and analyzing most of the data, developing the multiple regression models, and writing most of the paper.

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B.1 Introduction

Numerous studies have highlighted the importance of different organizational members for interpreting and translating strategic ideas and objectives into actions and thus for organizational success, where in turn these ideas and objectives itself are shaped and developed by those organizational members (Chua, 2007; Jørgensen and Messner, 2010; Pasch, 2019). Current research emphasizes the importance of financial managers, such as financial controllers, in this context (Fourné et al., 2023; Fournè et al., 2018; Goretzki et al., 2013; Hadid and Al-Sayed, 2021; Pasch, 2019; Tillema et al., 2022). Moreover, financial managers differ from other managers because they have a dual responsibility. On the one hand, they have fiduciary responsibility and must safeguard companies' financial conditions by diligently evaluating strategic initiatives and limiting investments if necessary. On the other hand, they are involved in (strategic) decision-making, much like other key executives, and also provide the resources for funding the strategic initiatives (Indjejikian and Matějka, 2009; Maas and Matějka, 2009). This dual responsibility and the associated tensions make them an especially interesting target for our study.

In line with their dual responsibility, most research on financial managers is concerned with the roles they inhabit (e.g., business partner, watchdog, scorekeeper) (Fourné et al., 2023; Pasch, 2019), how these roles might change (Goretzki et al., 2013; Tillema et al., 2022), how financial managers interact with other managers (Fourné et al., 2023; Hadid and Al-Sayed, 2021) and thus how they contribute to organizational success. Further studies point out their relevance for successful risk management (Braumann et al., 2020; Posch, 2020; Tillema et al., 2022). However, as argued by Tillema et al. (2022), there might be some ambiguity inherent in the business partner role resulting in financial managers not fulfilling this role and falling back into their traditional roles. Additionally, role conflicts might arise between different roles (Fourné et al., 2018; Indjejikian and Matějka, 2006). Despite these potential conflicts, financial managers play a central role for companies and their success, and thus, like other highly skilled workers, ideally should have a strong bond to their employing company (Chi and Han, 2008). Such a strong bond might also help them to balance their dual fiduciary and decision-making responsibility and to navigate the ambiguity, tensions and conflicts this dual responsibility likely entails. This in mind, we believe that it is worthwhile to take a step beyond the different financial manager roles and shed light on the individuals that fulfill these roles, as well as how they are psychologically constituted and might bond to their employer.

A concept that seems to fit well within this context is the "emerging construct" of psychological ownership (Dawkins et al., 2017, p. 163), which describes how employees, such as financial managers, are psychologically constituted as well as how and why they bond to their employing organization (Pierce et al., 2003, 2001). Psychological ownership is defined as that "state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is 'theirs'" (Pierce et al., 2003, p. 86). By now, research has shown that salaried managers are able to develop psychological ownership for their employing organization (Feldermann and Hiebl, 2022; Sieger et al., 2013; Sieger et al., 2011; van Dyne and Pierce, 2004).

In recent years, numerous studies have examined the antecedents and the outcomes of financial managers' psychological ownership, as well as the circumstances under which it unfolds its desirable effects on employee's attitudes and behaviors (for overviews, see Dawkins et al., 2017; Zhang et al., 2021). The antecedents of psychological ownership are typically divided into 'roots' (e.g., self-efficacy, self-identity, having a place), which explain why financial mangers develop possessive feelings, and 'routes' (e.g., having control, investing the self, intimate knowledge), which explain how financial mangers could experience feelings of ownership (Pierce et al., 2003, 2001).

However, the theoretical foundation of psychological ownership is an area of ongoing debate in the literature (Dawkins et al., 2017), wherein some potentially relevant aspects have been neglected so far. For example, there are different views on whether responsibility and territoriality are antecedents to psychological ownership, that explain why financial managers could experience feelings of ownership (Avey et al., 2012, 2009), or whether they are consequences and behavioral outcomes of psychological ownership (Brown et al., 2005; Pierce et al., 2004, 2001).[2] However, there is to date no research examining how the different 'roots' and 'routes' might interact with each other. That is somewhat surprising as Pierce et al. (2001, p. 307) raise the question of whether the 'roots' of and 'routes' to psychological ownership "are complementary or additive", while they argue later that they might be "complementary and additive in nature" (Pierce et al., 2003, p. 95). Despite the large amount of literature on the antecedents of psychological ownership (Dawkins et al, 2017; Zhang et al., 2021), to our best

[2] For our study, we rely on the conceptualization of psychological ownership by Pierce et al. (2001, 2004), as this conceptualization allows for a better separation of psychological ownership from related constructs, such as identification, as well as from behaviors, such as knowledge sharing or hiding (Dawkins et al., 2017).

knowledge there is no research examining how those antecedents interact with each other and how these interactions affect the emergence of psychological ownership.

However, different ‘roots’ of and ‘routes’ to psychological ownership – operationalized in terms of e.g., autonomy, stock ownership, organizational justice, organizational support, organizational tenure and information accessibility (cf. Zhang et al., 2021) – could coexist and be applied jointly within a firm. That is why Pierce et al. (2003, p. 203) argue that “further inquiries should examine a more complex set of interactions among the factors leading to the emergence of psychological ownership, such as interactions between individual and contextual characteristics, among routes, individuals, and contexts”.

We address this gap in the literature by examining three antecedents that are well established in the literature on psychological ownership and we study whether these antecedents complement one another. These antecedents are the degree of autonomy granted to financial managers, their organizational tenure, as well as their perceptions of organizational justice. These factors could be seen as contextual and individual characteristics resonating with the ‘roots’ of and ‘routes’ to psychological ownership. We operationalize the root of “having a place” via financial managers perception of organizational justice, the route of “having control” by the degree of autonomy granted to the financial managers, and the route of “intimate knowledge” with reference to the length of their organizational tenure. Building on complementarity theory and applying the payoff-function approach for testing multiple interaction effects (Braumann et al., 2020, Grabner and Moers, 2013), we address the following research question:

Are financial managers’ autonomy, as a reflection of the ‘having control’ route, their tenure within the company, as a reflection of the ‘intimate knowledge’ route, and their perception of organizational justice, as a reflection of the ‘having a place’ root, complements with regard to their effects on psychological ownership?

By addressing this question, our paper makes three main contributions. First, our results suggest that the effect of autonomy on psychological ownership is reinforced when organizational justice is perceived simultaneously, whilst this two-way interaction effect on psychological ownership is in turn more pronounced again when financial managers organizational tenure increases. That is, we observe a significant positive three-way interaction effect of financial managers’ autonomy, perceived organizational justice and tenure on their psychological ownership. Thus, we are the first to provide evidence that the ‘roots’ of and ‘routes’ to psychological ownership are complementary in nature, as assumed by Pierce et al. (2003, 2001). Second, with regard to the effect of organizational justice on psychological ownership, results of prior research are mixed. While Chi and Han (2008) found a positive effect of distributive and procedural justice on psychological ownership, Sieger et al. (2011) found a positive significant effect only for distributive justice on psychological ownership, but not for procedural justice. Furthermore, previous research lacks empirical evidence with regard to the effect of interpersonal and informational justice on psychological ownership. We address this gap in the literature by analyzing the effect of each of these four justice subdimensions separately, as well as the effect of an overall higher-order organizational justice construct, in their interplay with financial managers autonomy and tenure on their feelings of ownership. While we could not find a significant direct effect for any of these specifications on psychological ownership, our deeper investigation of the justice subdimensions indicates that each dimension on its own increases the impact of autonomy and organizational justice on psychological ownership. Third, our study contributes to the literature on financial managers’ roles and responsibilities (Fourné et al., 2023; Indjejikian and Matějka, 2009; Maas and Matějka, 2009; Pasch, 2019; Tillema et al., 2022) by being the first to examine the ‘roots’ and ‘routes’ how organizations can support these important managers in developing psychological ownership. Due to their multi-facetted fiduciary and managerial responsibilities, supporting financial managers in developing feelings of ownership and pro-organizational behavior might be particularly important to support an organization’s sound finance and accounting processes and communication.

Our study is also relevant for practice. In particular, privately held and small and medium sized companies might want to benefit from the numerous pro-organizational behavioral and attitudinal outcomes of formal employee ownership, but could or will not provide stock ownership (Zellweger, 2017). For those companies, investing in mechanisms that enhance the development of psychological ownership of financial managers, might lead to the same desired attitudinal and behavioral outcomes as stock ownership (Feldermann and Hiebl, 2022), and our paper highlights ‘roots’, ‘routes’, and their interplay of how privately held firms might benefit from psychological ownership.

The remainder of this paper is structured as follows. The next section provides the theoretical background on psychological ownership, why and how financial managers could experience feelings of ownership and how organizations can contribute to this psychological state. Based on these arguments, we then develop our central hypothesis. Afterwards, we present our data, our variable measurement and the statistical methods applied. This is followed by a discussion of our results, including an outline of our theoretical contributions and practical implications. Finally, we refer to the limitations of our study as well as to future research avenues.

B.2 Theoretical Background and Development of Hypotheses

B.2.1 Psychological Ownership

Pierce et al. (2003, p. 86) define psychological ownership "as the state in which individuals feel as though the target of ownership or a piece of that target is "theirs" (i.e., "It is mine!")." Thus, the conceptual core of ownership feelings is a sense of possession and strong attachment of individuals to objects, such that those take a prevailing role in the individual's identity and become part of an individual's extended self (Pierce et al., 2003, 2001; Dittmar, 1992). It is argued that psychological ownership could be developed for various objects, be it material or immaterial (Pierce et al., 2003). For example, employees such as financial mangers could experience psychological ownership for their employing organization (Sieger et al., 2013; Pierce et al., 2001).

Hence, the question of why and how feelings of ownership emerge might arise. The so called 'roots' of psychological ownership refer to the "motivation for (i.e., the individual functions served by) psychological ownership", and thus answering the question of why individuals develop ownership feelings (Pierce et al., 2003, p. 85). The so called 'routes' to psychological ownership address the "human experiences that result in the emergence of psychological ownership" and thus answer the question of "what factors cause individuals to experience these feelings and how this psychological state is achieved" (Pierce et al., 2003, 85). Prior research indicates three major human motives and needs ('roots') which are served by psychological ownership: (1) efficacy and effectance, (2) self-identity, and (3) having a place (Pierce et al., 2003). First, individuals have a desire to experience competence and causal efficacy, which results in their proactive exploration and manipulation of the environment to produce desired outcomes (Furby, 1978; Pierce et al., 2003). Controlling one's environment could be achieved by the individuals' attempt to possess objects in their environment (Pierce et al., 2003). Second, "ownership helps people define themselves, express their self-identity to others, and maintain the continuity of the self across time" (Pierce et al., 2003, p. 89; Dittmar 1992). Possession plays a vital role in social interactions, as it allows the owners to express their selves to others in terms of who they are, what they intend to become and what they do (Dittmar, 1992; Pierce et al., 2003). Third, prior research indicates that having a place one could inhabit and dwell in, is an inherent human need that provides physical and psychic security and comfort. This need is linked to feelings of ownership (Pierce et al., 2003; Zhang et al., 2021).

Pierce et al. (2003) propose the following three key experiences ('routes') which allow for the emergence of psychological ownership: (1) controlling the ownership target, (2) intimately knowing the target, (3) investing one's self in the target. First, prior research (for an overview see Pierce et al., 2003) indicates that those objects which could be controlled or used most by the individual are more likely to become part of ones extended self and thus are more likely to give rise to feelings of possession than other objects. Second, a living and long relationship and an active participation/association with objects allows for the development of knowledge over and familiarity with those objects (Pierce et al., 2003). Thus, "the more information possessed about the target of ownership, the more things are felt thoroughly and deeply, and in the process the self becomes attached to (one with) the object" (Pierce et al., 2003, p. 93). Third, "investment of the self allows individuals to see their reflection in the target and to feel their own effort in its existence" and thus might produce feelings of ownership (Pierce et al., 2003, p. 93). The investment of the self could refer to one's investment of time, energy and/or other efforts, being it physical or psychic (Pierce et al., 2003).

Ownership can also be experienced as real, in terms of formal/legal ownership, and/or psychological, in terms of feelings of ownership in one's mind (psychological ownership) (Etzioni, 1991). However, legal ownership is not a necessary condition for psychological ownership. The latter can also be felt in the absence of legal ownership (Etzioni, 1991; Furby, 1980; Pierce et al., 2003).

B.2.2 Autonomy and Psychological Ownership

Autonomy refers to financial mangers' perception of the degree of discretion and authority granted to them by their employing company, which provides them the opportunity and freedom to carry out their tasks independently (cf. Hackman and Oldham, 1976; Henssen et al., 2014; Mustafa et al., 2022). "Highly autonomous jobs allow incumbents to determine the order and pacing of job tasks, specific procedures for accomplishing those tasks, scheduling, coordination with other employees and other conditions of work" (Spector, 1986, p. 1006). Therefore, autonomy could be seen as a dimension of having control (Pierce et al., 2004; Spector, 1986), which might impact individual-level outcomes of financial managers through psychological experiences (Hackman and Oldham, 1976; Humphrey et al., 2007). Increased control over important organizational and job-related affairs, aspects and processes could encourage financial managers to (psychologically) take ownership and responsibility for ‘their’ job and organization (Henssen et al., 2014; Liu et al., 2012; Pierce et al., 2004). Thus, we argue that autonomy as an expression of control might encourage the development of psychological ownership.

The studies by Henssen et al. (2014), Liu et al. (2012) and Pierce et al. (2004) provide support for the suggested relationship between autonomy and psychological ownership. As increased autonomy could increase the level of control, Pierce et al. (2004, p. 512) expect the autonomy-psychological ownership relationship primarily to be a “control-ownership relationship”. Thus, we argue that financial managers autonomy is a primary reflection of the ‘having control’ route to psychological ownership and thus might affect the development of ownership feelings.

B.2.3 Organizational Tenure and Psychological Ownership

Organizational tenure is defined as the length of time an individual is employed by a company (Ng and Feldman, 2010). Following Simsek (2007), a longer organizational tenure allows employees to accumulate deeper knowledge of the firm and its environment. Therefore, we argue that staying longer within the organization can improve the development of psychological ownership, as it enables employees to familiarize themselves with and expand their information and knowledge about the employing organization (Pierce et al., 2001; Sieger et al., 2011; Zhang et al., 2021). A long service with the company could encourage the development of declarative knowledge, e.g., knowledge about organizational goals and hierarchical structures, as well as procedural knowledge, the application and handling of declarative knowledge in daily practice (Ng and Feldman, 2010). Additionally, it takes time for employees not only to get to know their organization, its goals, and values, but also the social networks within the organization (Gregersen, 1993; Simsek, 2007). Thus, the longer tenured employees are, the more likely it will be that they will establish or become part of “relatively richer social networks within the organization […] which could also help them develop instant knowledge of what happens in the organization” (Zhang et al., 2021, p. 749). Confirming this thinking, Zhang et al. (2021) provide statistically significant support for a positive relationship between organizational tenure and psychological ownership. Therefore, we argue that organizational tenure is positively related to feelings of ownership by increasing knowledge about the ownership target (Pierce et al., 2003, 2001; Zhang et al., 2021). Stated more formally: Financial managers organizational tenure is a primary reflection of the ‘intimate knowledge’ route to psychological ownership and thus might affect the development of possessive feelings.

B.2.4 Organizational Justice and Psychological Ownership

Organizational justice refers to employee's perception of fairness in the relationship with their employing organization (Sieger et al., 2011). Four dimensions of organizational justice have been established in organizational behavior research (Colquitt, 2001, Colquitt et al., 2001): (1) distributive justice, (2) procedural justice, (3) interpersonal justice, and (4) informational justice. First, distributive justice refers to fairness perceptions with regard to the allocation and distribution of outcomes, such as salary, promotion or other benefits (Colquitt, 2001; Colquitt et al., 2001). An outcome is perceived to be just, when comparing financial managers' input/output ratio with that of others within their reference frame is perceived to be equal (Adams, 1965; Colquitt et al., 2001; Greenberg, 1990). Second, procedural justice refers to the perceived fairness of the procedures used for decision making and allocating and distributing outcomes, such as salary, promotion or other benefits (Colquitt et al., 2001; Greenberg 1990). However, prior research indicates that "perceptions of procedural justice are influenced by factors that go beyond the formal procedures used to resolve disputes or allocate rewards", referring to financial managers' interpersonal treatment and the provisions of adequate explanations concerning the applied procedures (Greenberg, 1990, p. 411). Third, interpersonal justice "reflects the degree to which people are treated with politeness, dignity, and respect by authorities or third parties involved in executing procedures or determining outcomes" (Colquitt et al., 2001, p. 427; cf. Cropanzano et al., 2007). Fourth, informational justice "focuses on the explanations provided to people that convey information about why procedures were used in a certain way or why outcomes were distributed in certain fashion" (Colquitt et al., 2001, p. 427; cf. Cropanzano et al., 2007).

Following Greenberg (1990), financial managers' reaction to perceptions of fairness in organizational settings could be either behavioral or psychological. One such psychological consequence in reaction to their fairness perceptions might be that they develop feelings of ownership. In line with prior research, we argue that financial mangers' perception of organizational justice could enhance their psychological ownership toward their employing organization as it primarily satisfies their need for 'having a place' or 'home' (Chi and Han, 2008; Zang et al., 2021). Having a place or a home is important because "it provides the individual with both physical and psychic security" and safety (Pierce et al., 2003, p. 91).

Following Khan (1990, p. 708), employees' psychological safety could be defined as "feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career". Such psychological security might arise or be promoted in organizations in which fairness and fair treatments are predictable for financial managers. Such predictability could be achieved by giving financial managers the opportunity “to predict their fair work output based on their input” as well as to know and assess the procedures underlying the allocation of the expected outcomes (Zhang et al., 2021, p. 749). Additionally, a fair treatment in terms of interpersonal and informationals aspects could signal that they “are respected and esteemed by the organization and unlikely to be mistreated” (Zhang et al., 2021, p. 749). In turn, financial managers feeling safe in their workplace might perceive “themselves as part of the organization” and thus psychological ownership toward their employing organization might arise (Zhang et al., 2021, p. 749). Finally, Pierce et al. (2008, p. 484) argue that “feedback help[s] the individual develop an understanding of and more complete familiarity with the job. It is this familiarity that promotes and/or accompanies feelings of being at home”. To summarize, we argue that psychological ownership could be enhanced by organizational justice, as it makes the organization more attractive and a safe place (a home) for financial managers. Stated formally: Financial mangers’ perceived organizational justice is a primary reflection of the ‘having a place’ root to their psychological ownership and thus might result in possessive feelings.

Prior research provides initial support for the effect of different dimensions of organizational justice on employee’s psychological ownership. For example, Chi and Han (2008) show positive effects of distributive and procedural justice on the development of psychological ownership. Likewise, in a family firm setting, Sieger et al. (2011) find that distributive justice is positively related to psychological ownership, while procedural justice is not.

However, we could not identify research considering the effects of interpersonal and/or informational justice on psychological ownership. This is somewhat surprising, because a fair interpersonal and informational treatment could also contribute to a safe workplace and thus might also lead to feelings of possession. To also take interpersonal and interactional justice into account, we follow earlier research and treat organizational justice as an overall, latent higher-order construct, consisting of its four first-order dimensions of distributive, procedural, interpersonal and informational justice (Ambrose and Arnaud, 2005; Colquitt et al., 2005; Cropanzano et al., 2007). In line with Cropanzano et al. (2007, p. 39), we argue that the “ill effects of injustice can be at least partially mitigated if at least one component of justice is maintained. For example, a distributive and procedural injustice will have fewer negative effects if interactional justice is high”. If organizations “can get at least one component of justice right, some important benefits should result” (Cropanzano et al., 2007, p. 39).

B.2.5 The Interplay between the ‘Roots’ of and ‘Routes’ to Psychological Ownership

Although psychological ownership might be innate in every financial manager, feelings of ownership are not necessarily equally strong across different financial managers and might depend on various factors, such as the financial manger itself, as well as the target object (the employing organization) and the circumstances that contribute to development of psychological ownership (Pierce et al., 2003). As “the process by which psychological ownership emerges is associated with complex interactions among all the elements” (Pierce et al., 2003, p. 95), such as the ‘roots’ and ‘routes’ discussed above, our study is set to address this gap in the literature – at least partially – by examining the complementarity of financial managers’ autonomy, organizational tenure and perceived organizational justice.

However, while there is no common understanding of how the ‘roots’ of and ‘routes’ to psychological ownership interact with each other, there is agreement that they could interact. While Pierce et al. (2001, p. 307) suggest that the ‘roots’ and ‘routs’ could be “complementary or additive”, they later on argue that they are “complementary and additive” (Pierce et al., 2003, p. 95) and that “the feelings of ownership for a particular target will be stronger when an individual arrives at this state as a result of traveling multiple routes […] rather than just one route” (Pierce et al., 2003, p. 95, 96). Simply by being employed by the company, financial managers gain organizational tenure, could work in positions with more or less autonomy and are likely to be subject to, e.g., performance evaluations that could affect their perceptions of organizational justice. Furthermore, procedural justice refers to the provision of relevant information with regard to performance evaluations. It thus corroborates aspects of gaining further knowledge (‘intimate knowledge’ route) (Cropanzano et al., 2007), while it additionally might make employees feel safer in their workplace (‘having a place’ motive). Alternatively, while autonomy (‘having control’ route) allows for exercising control over one’s environment and thus to produce desired outcomes, this could also give rise to feelings of efficacy (‘self-efficacy and effectance’ root) (Henssen et al., 2014). Additionally, while longer organizational tenure allows for the acquisition of organizational knowledge (‘intimate knowledge’ route), it is likely that longer tenured employees get promoted to positions accompanied by more discretion (‘having control’ route) and have invested more time and other resources in the company (‘investment of self’ route) (Pierce et al., 2004).

Thus, it is likely that factors promoting psychological ownership of financial managers coexist and interact with one another in a company. In line with theory on psychological ownership, we suggest a complementarity relationship between financial managers’ degree of autonomy, their tenure and perceptions of organizational justice. To our best knowledge, there is no extant research examining how those 'roots' and 'routes' interact with each other and how such interaction affects the emergence of psychological ownership. That is somewhat surprising as the different antecedents that support the development of psychological ownership of financial managers could co-exist and could be applied commonly within a company. Thus, we propose the following:

Hypothesis: Financial managers' autonomy, as a reflection of the 'having control' route, their organizational tenure, as a reflection of the 'intimate knowledge' route, and their perceived organizational justice, as a reflection of the 'having a place' root, are complements with regard to each other in developing psychological ownership.

B.3 Methods

B.3.1 Data Selection and Sample

To test our research question and hypothesis, we rely on survey data from 88 financial managers of German companies. We excluded companies that belonged to the financial service sector, were listed or employed less than 10 employees. We exclude listed companies and financial service firms as employee stock ownership is commonly applied in such firms and sectors (Kuvaas, 2003), which might affect financial managers' psychological ownership. Following van Dyne and Pierce (2004), we focused on respondents belonging to the upper hierarchical level of the companies, that is the highest ranked financial managers who could be classified as key informants (Menz et al., 2012; Sieger et al., 2013) providing valuable insight into the organization and their feelings of ownership. However, with regard to company size and its legal form, the highest ranked financial manager could be either the chief financial officer or the head of accounting and control. These managers mostly do not hold ownership shares (Hiebl, 2015). To capture different degrees of autonomy granted to financial managers at different positions, we additionally include management accountants and financial accountants. Furthermore, as prior research indicates that micro and very small enterprises are unlikely to employ professional managers, such as financial managers (Bendickson et al., 2016; Lavia Lopez and Hiebl, 2015), we have excluded companies with less than 10 employees.

We purchased archival data (e.g., company size and industry) and contact addresses of companies meeting the criteria above from the largest professional financial data supplier in Germany. Data collection proceeded between March 2018 and July 2019 in two waves following recent recommendations in conducting survey research (Chidlow et al., 2015;

Dillman et al., 2014; Hiebl and Richter, 2018). That is, in establishing a pre-contact to the financial managers by ourselves, we invited them by telephone or email to participate in our survey and sent them the questionnaire as PDF to fill out by email. This first round of data collection generated 68 usable responses. To increase the number of responses, we initiated a second wave of data collection. For this second round of data collection, we hired a professional market research agency, which implemented the same questionnaire as in the first round in their web browser and invited those participants, which we could not reach in the first wave, to take part in the survey. The second round of data collection generated additional 20 usable responses.

In sum, across both waves of data collection, we received 233 fully or partially complete responses, of which 88 were used for our analysis. We had to remove 145 responses mostly due to missing data or because the respondent could not be classified as financial manager or inhabited a dual role, such as chief financial officer and chief executive officer.[3] We exclude responding financial managers that also acts as chief executive officers, as this position comes with the highest degree of autonomy and thus might affect our results. We have received only general email addresses (e.g., office@firm.de) instead of financial mangers' personal email addresses from the data supplier. Thus, we could not calculate an exact response rate, as we could not infer how many financial managers have actually received our invitation to take part in our survey. It might be possible that not all survey invitations sent to the general email addresses have been forwarded to the financial managers. However, as argued by Specklé and Widener (2018, p. 4), for studies that aim for testing theoretical relationships, rather than intending to reach statistical generalizability, "it is only necessary that the sample is relevant to the group of subjects the theory is supposed to apply to, e.g., the targeted population". Thus, a representative and random sample necessary for achieving generalizability of results and calculated by a reliable response rate seems of negligible importance for our study.

B.3.2 Measures

To conduct the survey, we relied on previously tested and validated measurement scales. All of these measures had originally been developed in the English language and had to be translated into German to conduct the survey. To ensure a reliable translation, we followed the back-translation approach by Brislin (1970). Thus, we have translated the original English

[3] Individuals having multiple managerial roles – such as a dual role a chief financial officer and chief executive officer – is uncommon in large, listed firms, but can be sometimes observed in smaller firms which generally have less personal and financial resources and therefore install less managerial positions than larger firms (e.g., Haveman and Khaire, 2004).

measurements into German and subsequently, an independent language expert re-translated the German version into the English language. No major differences were found by comparing both the original and re-translated English scales.

For those scales, for which a German translation was already available, we have used the existing German scales and forgone the translation and back-translation procedure (for German scales for psychological ownership, distributive and procedural justice, please see Bernhard, 2011). Additionally, we have had the questionnaire reviewed and pre-tested by experienced researchers and financial managers. Their feedback was incorporated in our questionnaire to refine our measurements. To further ensure the validity of our constructs, we performed a principal component analysis using varimax rotation and have calculated Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) (Bellora-Bienengräber et al., 2022). The results are shown in Table B-1 and display a satisfactory reliability and validity of our constructs. For proceeding with regression analyses, the resulting factor scores of the principal component analysis were used (Bellora-Bienengräber et al., 2022; Braumann et al., 2020).

Psychological ownership. Psychological ownership was measured using the 7-point Likert scale developed by Pierce et al. (2004), including items such as "I sense that this is MY company". This scale is commonly applied in and thus validated by a large amount of research on psychological ownership (e.g., Henssen et al., 2014; Sieger et al., 2013). Cronbach's alpha for the scale was 0.909. Further quality criteria are displayed in Table B-1.

Autonomy. For measuring autonomy, we relied on a 6-item instrument originally developed by Sims et al. (1976) and refined by Henssen et al. (2014), e.g., asking the financial managers to indicate the degree to which the following exemplary statement applies to them: "I have control over my own work pace". Cronbach's alpha for this measure was 0.861. For further quality criteria see Table B-1.

Tenure. Financial manager's tenure was measured as the number of years they have worked for their company when thy filled out our questionnaire.

Organizational Justice. We measured organizational justice relying on the 20-item scale for distributive, procedural, interpersonal and informational justice of Colquitt et al. (2001). This scale has been adapted to suit our performance evaluation context, yet remains versatile for application in various settings. Following this perspective, distributive justice refers to the outcomes financial mangers receive due to their performance evaluation while procedural justice encompasses their perception of the procedures utilized in their recent performance evaluation. Following this conceptualization, interpersonal justice refers to a polite and respectful treatment of financial managers during the performance appraisal, whilst informational justice refers to the provision of explanations concerning the performance evaluation process. Sample items include questions such as “To what extent is your outcome of the performance evaluation (e.g., salary, promotion, and raise) appropriate for the work you have completed” (distributive justice), and with regard to the authority figure who enacts the performance evaluation “To what extent has he/she treated you in a polite manner” (interpersonal justice), “To what extent has he/she explained the performance evaluation thoroughly” (informational justice), and “To what extent have the performance evaluation upheld ethical and moral standards” (procedural justice). However, due to our sample size (N=88) and twenty items for measuring organizational justice, to preserve statistical power of our analysis, we have run the principal component analysis for each justice dimension separately applying the varimax rotation. Factor loadings are all above the generally accepted threshold of 0.6, Cronbach’ alpha, average variance extracted and composite reliability display a satisfactory level of validity and reliability for our measurements (Hair et al., 2010; see Table B-1). As we are interested in the effect of overall organizational justice on psychological ownership, we treated organizational justice as a formative latent higher-order construct, formed by its four first-order dimensions distributive, procedural, interpersonal, and informational justice (see Bisbe et al., 2007). For specifying this higher-order justice construct, the factor scores resulting from principal component analysis for the first-order dimensions were summed up and then divided by the number of subdimensions (e.g., Bellora-Bienengräber, et al., 2022).

Control Variables. Due to possible effects on our variables of interest, we controlled for respondents’ age (cf. McFarlin & Sweeney, 1992; Sieger et al., 2011) and gender (cf. Dommer and Swaminathan, 2013; Lee et al., 2000), as well as for firm size (Henssen et al., 2014; Sieger et. al., 2011) and the firm’s status as family firm (Gomez-Mejia et al., 2007; Sieger et al., 2011; Rantanen and Jussila, 2011). Furthermore, we controlled for financial managers’ position in the company, as this could affect the degree of autonomy which they experience in their workspace as well as how they respond to different justice dimensions (Begley et al., 2006). We measured financial managers’ position in the company as a nominal variable, controlling for positions such as chief financial officer (coded as 2), head of management accounting and control (coded as 3), management accountant (coded as 4) and financial accountant (coded as 5). Respondents inhabiting a dual role as chief financial officer/chief executive officer (CFO/CEO) were excluded (coded as 1).

We assessed convergent validity of all of our measurements by calculation factor loadings and the AVE. Construct reliability was evaluated by calculating Cronbach's alpha and the CR. Results of the principal component analysis reveals that all factor loadings are above the threshold of 0.6, which indicates significant loadings with regard to our sample size (N=88) (Hair et al., 2010). Likewise, the AVE for all constructs exceed the level of 0.5, the Cronbach's alphas for the constructs exceed the level of 0.8 and the CR for each of our constructs is above 0.7, thus indicating a good validity and reliability of our measurements (Hair et al., 2010). The items, factor loadings and mentioned quality criteria above are displayed in Table B-1.

Table B-1. Items, measurement reliability and validity criteria

Construct	Item	Cronbach's α	CR	AVE	Factor Loadings
Psychological ownership	This is MY organization.	0.909	0.926	0.643	0.815
	I sense that this organization is OUR company.				0.836
	I feel a very high degree of personal ownership for this organization.				0.900
	I sense that this is MY company.				0.865
	This is OUR company.				0.806
	Most of the people that work for this organization feel as though they own the company.				0.642
	It is hard for me to think about this organization as MINE.				0.718
Distributive justice	The following items refer to the outcomes (e.g., salary, promotion, and raise) of your last performance evaluation.	0.977	0.983	0.935	
	To what extent does your performance evaluation outcome (e.g., salary, promotion, and raise) reflect the effort you have put into your work?				0.955
	To what extent is your outcome of the performance evaluation (e.g., salary, promotion, and raise) appropriate for the work you have completed?				0.976
	To what extent does your performance evaluation outcome (e.g., salary, promotion, and raise) reflect what you have contributed to the organization?				0.967
	To what extent is your outcome of the performance evaluation (e.g., salary, promotion, and raise) justified, given your performance?				0.970
Interpersonal justice	The following items refer to the authority figure who enacted your last performance evaluation.	0.965	0.975	0.907	
	To what extent has he/she treated you in a polite manner?				0.941
	To what extent has he/she treated you with dignity?				0.971
	To what extent has he/she treated you with respect?				0.972
	To what extent has he/she refrained from improper remarks or comments?				0.924
Informational justice	The following items refer to the authority figure who enacted your last performance evaluation.	0.938	0.954	0.806	
	To what extent has he/she been candid in her/her communications with you?				0.826
	To what extent has he/she explained the performance evaluation thoroughly?				0.949
	To what extent were his/her explanations regarding the performance evaluation reasonable?				0.961
	To what extent has he/she communicated details in a timely manner?				0.918
	To what extent has he/she seemed to tailor his/her communications to individuals specific needs?				0.824
Procedural justice	The following items refer to the procedures used to arrive at your outcomes at your last performance evaluation.	0.907	0.928	0.650	
	To what extent have you been able to express your views and feelings during the performance evaluation?				0.671
	To what extent have you had influence over the outcome (e.g., salary, promotion, and raise) arrived at by the performance evaluation?				0.833
	To what extent have the performance evaluation been applied consistently?				0.746

	To what extent has the performance evaluation been free of bias?				0.874
	To what extent have the performance evaluation been based on accurate information?				0.842
	To what extent have you been able to appeal the outcome (e.g., salary, promotion, and raise) arrived at by the performance evaluation?				0.897
	To what extent have the appraisal interview upheld ethical and moral standards?				0.758
Autonomy	I have the freedom to exercise my job.	0.861	0.900	0.603	0.889
	I have the freedom to do almost everything I want in my job.				0.812
	I have the opportunity to think an act independently.				0.844
	I have control over my own workspace.				0.706
	I have the opportunity to exercise my job independently form the board of directors.				0.700
	I have the opportunity to exercise my job independently from others.				0.682

B.3.3 Biases and Robustness Checks

Like any other survey research relying on a single-respondent approach, common method bias might have an impact on our results (Podsakoff et al., 2003). We followed the commonly applied recommendations by Podsakoff et al. (2003) to mitigate this bias ex ante and ex post. We applied the following remedies to address common method bias ex ante when designing the survey: (1) we have guaranteed our respondents full anonymity, (2) the items of the independent and dependent variables in our questionnaire have been psychologically separated, and (3) we relied on previously tested and validated measurements, which have undergone several tests to ensure that no problems might arise from the measurements itself. To prevent and reduce the potential impact of common method bias on our results ex-post by statistical controls, we utilized Harman' single factor test and the marker variable technique (Lindell and Whitney, 2001; Podsakoff et al., 2003, Posch, 2020; Simmering et al., 2015). We conducted Harman's single factor test, which indicates that the most crucial factor accounts for 34.19% of the covariance between the variables of interest. However, as this test is somewhat controversial in detecting the effect of common method variance (Podsakoff et al., 2003; Posch, 2020), we have additionally adopted the correlational marker variable technique, as recommended by Lindell and Whitney (2001) and Simmering et al. (2015). According to this technique, an additional, theoretically unrelated variable – the so-called marker variable – has to be added to the already existing variables. Thereby, the smallest absolute observed correlation between the marker variable and the main variables reflects the effect of common method bias (Richardson et al., 2009; Simmering et al., 2005). Thus, we computed the correlations between all variables, including "venture capital financing" as marker variable (single item dummy measurement, asking "Has your company ever received venture capital funding?"), which results in the smallest correlation of 0.0003. As this correlation is very low, our survey data might not be strongly affected by common method variance.

For addressing non-response bias, prior studies have compared characteristics of non-responding and responding companies regarding characteristics such as firm size and industry affiliation (Bedford et al., 2016; Posch, 2020; Wasserman, 2006). As we are able to identify non-responding organizations, we compared firm size and industry affiliations of these organizations with those that took part in our survey. Performing a chi-square test for industry affiliation (dummy variable, coded 1 for belonging to the manufacturing sector and 0 for not belonging to the manufacturing sector) and Mann-Whitney U test for firm size (total number of employees) reveals no significant differences between these two groups. Consequently, we are confident that non-response bias does not harm the validity of our results.

In addition, we have carried out further robustness checks. Family firms seem to constitute an environment in which psychological ownership is suggested to flourish, as their frequently found non-economic motives might resonate particularly well with the ‘roots’ of and ‘routes’ to psychological ownership (Gomez-Mejia et al., 2007; Henssen et al., 2014; Rantanen and Jussila, 2011; Sieger et. al, 2013, 2011). As 52% of the companies included in our sample could be classified as family firms (see Table B-2), we have checked for the family member status of the responding financial managers. If the financial manager is a family member of the owning business family, this could influence his/her feelings of ownership. Therefore, we have excluded the six cases in which the respondent is a family member and have run the regressions again. Additionally, prior research indicates that employee’s feelings of ownership might be strongly influenced by their equity ownership (Wassermann, 2006). Though in line with prior research (Henssen et al., 2014; Sieger et al., 2011), we have excluded the three cases in which the respondent holds stock ownership and run additional regressions to rule out the possibility that this might affect our results. For both modifications, that is, excluding family members and stock ownership, the regression results (untabulated) remain similar in terms of sign and significance with regard to the three-way interaction. Thus, we are confident that our results are robust to the family member status and stock ownership of the respondents.

Furthermore, as outlined earlier, data collection took place in two waves between March 2018 and July 2019. To ensure that the different rounds of data collection do not affect our findings, we have checked for this by including the round of data collection as an additional control variable in our regression analysis. To this end, we created a dummy variable coded 0 for the first round of data collection and 1 for the second round of data collection. When we run the regressions including this variable (untabulated), we cannot identify a significant effect of the round of data collection on our results. Furthermore, we performed a Mann- Whitney-U test to evaluate if there are any differences with regard to our dependent variable (psychological ownership) between the two groups of cases resulting from the two rounds of data collection. The asymptotic significance of this test is at $p = 0.992$, thus indicating that there are no considerable differences among the two groups.

Finally, we have included the variance inflation factors (VIFs, see Table B-4 and Table B-5) in our regression analysis to address potential multicollinearity issue. However, none of these VIFs exceed the critical threshold of 10 (Hair et al., 2010). We thus have no indication that our results might be negatively affected by multicollinearity issues.

B.4 Data Analysis and Results

B.4.1 Data Analysis

For testing complementarity between financial managers' autonomy, tenure and perceived organizational justice – and thus the underlying roots/routes of having control, intimate knowledge and having a place – we relied on the payoff-function approach, which allows to analyze whether the effect of one root/route to psychological ownership increases in the presence of another root/route to psychological ownership (Braumann et al., 2020; Grabner and Moers, 2013). Thus, we estimate the following model:

$$PO = \beta_0 + \beta_1 * AUTO + \beta_2 * TEN + \beta_3 * JUST + \beta_4 * AUTO * TEN + \beta_5 * TEN * JUST + \beta_6 * AUTO * JUST + \beta_7 * AUTO * TEN * JUST + \beta_8 * Age + \beta_9 * Gender + \beta_{10} * Position + \beta_{11} * Family\ firm + \beta_{12} * Firm\ size + \varepsilon_{PO}$$

Like Braumann et al. (2020), we applied hierarchical regression analysis. Model I only includes the control variables, model II additionally contains the direct effects of the three roots/routes, model III comprises the two-way interactions between the three roots/routes, and model IV finally reports the results for the hypothesized three-way interaction of autonomy, tenure and organizational justice. As we have calculated the factor scores, which were used in the regression analysis (cf. Bellora-Bienengräber et al., 2022), mean centering was not necessary. Hierarchical Regression analysis was carried out in SPSS Statistics (Version 29).

With twelve independent variables and a sample size of N = 88, statistical power is adequate for our analyses, as the ratio of cases to independent variables in our regression analyses is larger than 5 (Hair et al., 2010) and, on a more rigorous threshold, larger than 20 plus 5 times the number of independent variables (Khamis and Kepler, 2010).

B.4.2 Descriptive Statistics

On average, the companies in our sample employed 312 employees and 52% per cent of the companies could be classified as family firms (see Table B-2). The participating financial managers were on average forty-six years old, have worked for their employing company for eleven years and seventy-six percent of them are men. 38 of the responding managers are chief financial officers, further 38 respondents are employed as head of accounting/controlling, while the remaining 12 respondents are working as financial/management accountants.

Since we have used factor scores for our measured constructs in the regression analysis, for the ease of interpretation with regard to the descriptive statistics, we relied on the equally weighted means for the multi-item constructs (cf. Braumann et al., 2020). Table B-2 provides an overview on the descriptive statistics, and Table B-3 displays the correlation matrix for our measures.

Table B-2. Descriptive statistics

Construct	N	Min.	Mean	Max.	Std. dev.
Psychological ownership (PO)	88	1.00	4.230	6.86	1.502
Autonomy (AUTO)	88	1.33	5.523	7.00	1.037
Tenure (TEN)	88	0.00	10.991	48.00	9.690
Distributive justice (JUST_D)	88	1.00	5.242	7.00	1.399
Interpersonal justice (JUST_IP)	88	1.00	6.321	7.00	1.145
Informational justice (JUST_INF)	88	1.00	5.300	7.00	1.466
Procedural justice (JUST_P)	88	1.86	5.081	7.00	1.285
Justice (higher order construct, JUST_HOC)	88	1.30	5.416	7.00	1.183
Age	88	23	46.350	71	9.890
Gender	88	0	0.760	1	0.429
Position	88	2	2.750	5	.806
Family firm	88	0	0.520	1	0.502
Firm size	88	42	311.990	2639	486.010

Note: We used factor scores for our measured constructs. However, for ease of interpretation with regard to the descriptive statistics, we provide the equally weighted means for the multi-items constructs in this table.

Table B-3. Correlations

	Construct	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Psychological ownership (PO)												
2.	Autonomy (AUTO)	0.241**											
3.	Tenure (TEN)	0.160	0.22**										
4.	Distributive justice (JUST_D)	0.240**	0.371***	0.139									
5.	Interpersonal justice (JUST_IP)	0.021	0.258**	0.049	0.682***								
6.	Informational justice (JUST_INF)	0.258**	0.258**	0.092	0.745***	0.643***							
7.	Procedural justice (JUST_P)	0.355***	0.289***	0.131	0.730***	0.637***	0.815***						
8.	Justice (higher order construct, JUST_HOC)	0.276***	0.328***	0.121	0.877***	0.797***	0.920***	0.929***					
9.	Age	0.142	0.032	0.515***	-0.068	0.002	-0.014	0.069	0.006				
10.	Gender	-0.174	-0.151	0.087	-0.094	-0.041	-0.042	-0.161	-0.105	0.074			
11.	Position	-0.125	-0.066	-0.121	-0.081	0.001	-0.123	-0.136	-0.109	-0.282***	-0.075		
12.	Family firm	0.177*	0.032	0.024	-0.039	-0.120	0.006	-0.133	-0.081	-0.068	-0.055	0.071	
13.	Firm size	-0.040	-0.065	0.045	0.067	0.133	0.088	0.038	0.083	0.022	0.228**	0.012	-0087

B.4.3 Main Results – The Complementarity between the ‘Roots’ of and ‘Routes’ to Psychological Ownership

The results for the regression analyses are reported in Table B-4. With an adjusted R^2 of 0.16, model IV with our full specification exhibits a good predictive validity. We have hypothesized that autonomy, as primary reflection of the ‘having control’ route, financial managers’ tenure, as primary reflection of the ‘intimate knowledge’ route, and organizational justice, as primary reflection of the ‘having-a-place’ motive, are complements with respect to their effect on psychological ownership. Thus, the effect of one of these antecedents on psychological ownership would increase, when simultaneously other antecedents are in place that resonate with other ‘routes’ to and ‘roots’ of psychological ownership (Pierce et al., 2003, 2001). As suggested in our hypothesis, we find a positive and significant three-way interaction effect between autonomy, tenure and organizational justice at the level of $p = 0.002$ ($\beta = 0.835$). Additionally, model IV (Table B-4) reveals a positive and significant two-way interaction between organizational justice and autonomy, assuming an average length of service ($\beta = 0.574$; $p = 0.031$). Thus, corroborating our hypothesis, there is complementarity between organizational justice and autonomy, which increases with longer organizational tenure. Based on our results, we are able to show that autonomy, tenure and organizational justice and their corresponding routes of having control and intimate knowledge as well as the root of having a place complement each other in increasing psychological ownership.

Since we have treated organizational justice as a higher-order construct, we could not infer whether the ‘overall-justice’ effect displayed in Table B-4, model IV, is driven equally by the four subdimensions or whether there are single subdimensions that have stronger/weaker effects and thus drive the overall effect. To shed light on potentially different effects of distributive, procedural, interpersonal and informational justice we disentangle the higher-order construct and run separate hierarchical regression analyses for each subdimension. The results for the fully specified model with regard to the justice subdimensions, including the hypothesized interactions effects, are shown in Table B-5.

Table B-4. Regression results considering organizational justice as higher order construct

Dependent variable: Psychological Ownership

	Model I				Model II				Model III				Model IV			
	Standardized Beta (Standard Error)		**p-Value**	**VIF**	**Standardized Beta (Standard Error)**		**p-Value**	**VIF**	**Standardized Beta (Standard Error)**		**p-Value**	**VIF**	**Standardized Beta (Standard Error)**		**p-Value**	**VIF**
Independent Variables																
Autonomy (AUTO)					-0.112 (0.113)		0.325	1.185	-0.138 (0.124)		0.269	1.433	-0.248 (0.122)	**	0.046	1.554
Tenure (TEN)					0.085 (0.013)		0.503	1.481	0.022 (0.014)		0.872	1.778	-0.002 (0.013)		0.986	1.784
Justice (JUST_HOC)					0.234 (0.126)	**	0.039	1.162	0.209 (0.132)	*	0.078	1.264	0.027 (0.140)		0.826	1.593
Interaction effects																
AUTO*TEN									0.059 (0.013)		0.654	1.580	-0.180 (0.013)		0.166	0.728
TEN*JUST									0.207 (0.016)		0.135	1.739	-0.102 (0.018)		0.527	2.694
JUST*AUTO									-0.158 (0.096)		0.248	1.720	0.574 (0.183)	**	0.031	7.099
AUTO*TEN*JUST													0.835 (0.019)	***	0.002	6.992
Control Variables																
Age	0.132 (0.011)		0.234	1.092	0.094 (0.013)		0.462	1.505	0.131 (0.013)		0.317	0.1578	0.135 (0.012)		0.276	1.578
Gender	0.170 (0.253)		0.121	1.065	-0.156 (0.253)		0.155	1.098	-0.204 (0.268)	*	0.080	1.225	-0.236 (0.254)	**	0.033	1.235
Position	-0.101 (0.136)		0.361	1.094	-0.086 (0.136)		0.435	1.113	0.058 (0.142)		0.617	1.224	-0.066 (0.134)		0.545	1.224
Family firm	0.210 (0.211)	**	0.050	1.016	0.218 (0.209)	**	0.042	1.029	0.222 (0.211)	**	0.039	1.039	0.197 (0.199)	*	0.053	1.045
Firm size	0.021 (0.000)		0.848	1.063	-0.011 (0.000)		0.919	1.081	-0.022 (0.000)		0.838	1.101	0.007 (0.000)		0.943	1.109
Constant	-0.203		0.788		-0.090		0.914		-0.254		0.764		-0.199		0.803	
F-Statistics	1.766		0.129		1.778	*	0.094		1.529		0.139		2.442	***	0.010	
adjusted R^2	0.042				0.067				0.063				0.166			
N	88				88				88				88			

Significance: *p < 0.1, **p < 0.05, ***p < 0.01

Table B-5. Regression results considering the subdimensions of organizational justice

Dependent variable: Psychological Ownership

	Distributive Justice			Procedural Justice			Interpersonal Justice			Informational Justice		
	Standardized Beta (Standard Error)	p-Value	VIF	Standardized Beta (Standard Error)	p-Value	VIF	Standardized Beta (Standard Error)	p-Value	VIF	Standardized Beta (Standard Error)	p-Value	VIF
Independent Variables												
Autonomy (AUTO)	-0.269 (0.127) **	0.038	1.667	-0.222 (0.116) *	0.060	1.483	-0.164 (0.126)	0.197	1.504	-0.179 (0.123)	0.150	1.497
Tenure (TEN)	-0.052 (0.014)	0.694	1.780	-0.015 (0.013)	0.905	1.797	0.017 (0.014)	0.903	1.819	0.043 (0.014)	0.751	1.806
Justice subdimension (JUST)	0.044 (0.127)	0.729	1.650	0.170 (0.117)	0.149	1.489	-0.110 (0.123)	0.376	1.443	0.037 (0.128)	0.773	1.633
Interaction effects												
AUTO*TEN	-0.139 (0.013)	0.294	1.780	-0.140 (0.012)	0.263	1.688	-0.135 (0.013)	0.306	1.637	-0.119 (0.013)	0.359	1.638
TEN*JUST	0.008 (0.016)	0.956	2.364	-0.203 (0.015)	0.182	2.484	0.053 (0.018)	0.720	2.029	-0.026 (0.016)	0.871	2.538
JUST*AUTO	0.444 (0.164)	0.102	7.410	0.375 (0.139) **	0.030	3.139	0.447 (0.172)	0.134	8.264	0.241 (0.145)	0.286	4.968
AUTO*TEN*JUST	0.761 (0.018) ***	0.007	7.646	0.614 (0.015) ***	0.002	3.889	0.734 (0.018) ***	0.010	7.423	0.523 (0.016) **	0.023	5.018
Control Variables												
Age	0.175 (0.013)	0.162	1.584	0.119 (0.012)	0.326	1.573	0.118 (0.013)	0.367	1.593	0.139 (0.013)	0.279	1.605
Gender	-0.227 (0.253) **	0.040	1.208	-0.190 (0.251) *	0.081	1.265	-0.259 (0.264) **	0.025	1.215	-0.226 (0.254) **	0.042	1.180
Position	-0.027 (0.135)	0.803	1.215	-0.058 (0.131)	0.585	1.219	-0.095 (0.140)	0.404	1.210	-0.096 (0.137)	0.385	1.208
Family firm	0.190 (0.200) *	0.062	1.043	0.213 (0.196) **	0.034	1.061	0.217 (0.210) **	0.043	1.059	0.191 (0.203) *	0.065	1.036
Firm size	-0.017 (0.000)	0.867	1.091	0.015 (0.013)	0.905	1.797	0.046 (0.000)	0.672	1.119	0.000 (0.000)	0.998	1.117
Constant	-0.505	0.534		-0.274	0.725		-0.020	0.981		-0.076	0.926	
F-Statistics	2.331 **	0.014		2.859 ***	0.003		1.663 *	0.093		2.013 **	0.034	
adjusted R^2	0.155			0.204			0.084			0.123		
N	88			88			88			88		

Significance: $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$

As can be seen from Table B-5, irrespective of the specific subdimension, all results display a positive and significant three-way interaction between the relevant justice dimension, tenure and autonomy. Thus, complementarity between the underlying 'roots' of and 'routes' to psychological ownership could be assumed, while none of the subdimension is directly linked to psychological ownership.

B.5 Discussion and Conclusion

Operationalizing the 'having control' route via autonomy, the 'intimate knowledge' route by financial mangers' tenure, as well as the 'having a place' motive in terms of organizational justice, our study investigates whether the 'roots' of and 'routes' to psychological ownership are complementary as suggested by Pierce et al. (2003, 2001). Applying a payoff-function approach in hierarchical regressions on a sample of 88 financial managers in German companies reveals that autonomy, tenure and organizational justice indeed reinforce each other in their effect on ownership feelings. Thus, our results provide support for the assumption of Pierce et al. (2003, 2001) that the 'roots' of and 'routes' to psychological ownership are complementary in nature. Against this backdrop, our findings contribute to theory and practice in the following ways.

B.5.1 Theoretical Contributions

First, our study contributes to the development of the theory of psychological ownership. As we have investigated three different antecedents of psychological ownership (autonomy, tenure, organizational justice), which could be seen as reflection of different 'roots' of (e.g., having a place) and 'routes' to (e.g., having control, intimate knowledge) psychological ownership, our study is the first that allows to draw conclusions on potential interactions among the 'roots' of and 'routes' to psychological ownership. Our results suggest a positive and significant interaction effect of autonomy and organizational justice on psychological ownership, assuming an average length of service. Additionally, for long tenured employees the effect of the interaction between autonomy and organizational justice on psychological ownership becomes more pronounced, again. This supports the basic assumption of complementarity, which implies that the benefits of one factor increase with the use of another factor (Milgrom and Roberts, 1995). Given these results, we provide a more fine-grained understanding on the boundary conditions under which psychological ownership emerges, especially with regard to the complementarity of different antecedents as proposed by Pierce et al. (2003, 2001).

Second, our study contributes by shedding additional light on the previously observed mixed findings for the effect of distributive and procedural justice on psychological ownership. While the study of Chi and Han (2008) found initial evidence that both, distributive and procedural justice are positively related to psychological ownership, the study by Sieger et al., (2011) could confirm a significant positive relationship only for distributive justice and psychological ownership, but not for procedural justice. However, based on our results we could not find a positive significant direct effect for either of those, nor for interpersonal or informational justice. It seems, that organizational justice only affects psychological ownership in interaction with other factors. Moreover, in line with the findings of Cropanzano et al. (2007), it seems to be of minor importance whether organizational justice as a whole or as only one of its subdimensions is perceived as important by financial managers.

Furthermore, to our best knowledge, our study is the first analyzing the effects of all four justice dimensions – separately and jointly via a formative latent higher-order overall justice factor – on psychological ownership. Prior research has argued that interpersonal and informational justice might not play a prominent role in predicting the development of ownership feelings toward the employing organization (Chi and Han, 2008; Sieger et al., 2011). As interpersonal and informational justice "seem to be more relevant when referring to authority figures" rather than to the organization itself, "employees mainly draw on distributive and procedural justice when deciding how to react to the overall organization" (Sieger et al., 2011, p. 79; cf. Chi and Han, 2008; Colquitt et al., 2001). In contrast, our findings suggest that interpersonal and informational justice do matter. Although we could not find a significant direct effect of either, interpersonal or informational justice, on psychological ownership, with regard to the interaction effects, our results reveal that interpersonal justice reinforces the effect of autonomy and tenure on psychological ownership in the same way as distributive and procedural justice do (at a level of $p < 0.01$). The same applies for the complementarity effect of informational justice, autonomy, and tenure for which the effect on psychological ownership is just marginally lower ($p < 0.05$) compared to distributive, procedural and interpersonal justice. Therefore, a fair relationship between the evaluating and the evaluated person seems to add significantly to evaluated persons' feelings of psychological ownership. In consequence, our results show that organizational justice is multi-layered and must be considered in its entirety as well as in its sub-dimensions and that it might only unfold into desirable pro-organizational outcomes, such as psychological ownership, in interaction with other factors, such as autonomy and tenure.

Third and finally, our study contributes to the literature on financial managers' roles (e.g., Fourné et al., 2023; Indjejikian and Matějka, 2009; Maas and Matějka, 2009; Tillema et al., 2022). While this literature has already revealed several different roles (e.g., business partner, watchdog and scorekeeper) of financial managers (e.g., Fourné et al., 2018; Maas and Matějka, 2009) and examined their integration in important processes such as strategy development (e.g., Fourné et al., 2023; Hadid and Al-Sayed, 2021), to our best knowledge, it has not yet been examined how financial managers might develop psychological ownership. Therefore, by analyzing why and how financial managers experience psychological ownership, we also extend the theory of psychological ownership in management accounting literature (e.g., Haesebrouck, 2021). In particular, past research shows that financial managers fulfil a delicate dual role that involves both fiduciary responsibilities and responsibilities in co-shaping an organizations' strategic direction (Fourné et al., 2023; Indjejikian and Matějka, 2009). So far, much research on how they can cope with the tensions this dual role involves and move away from its more traditional manifestations (e.g., watchdog and scorekeeper) to become business partners is grounded in role-identity theory. Thereby, "role-identity refers to one's self-understanding in a social or organizational position" (Tillema, 2022, p. 2063). However, research on psychological ownership argues that what individuals/employees (psychologically) own becomes "part of the extended self" (Pierce et al., 2003, p. 85; cf. Dittmar, 1992). Thus, psychological ownership might elucidate potential conflicts among and within different roles of financial managers, as it sheds light on their self-understanding and role-identity. Therefore, it might be particularly important for contemporary organizations to do the best they can to support their financial managers in developing psychological ownership. This way, it seems more likely that they will not be tempted to misuse their important role for causes that are not in the best interest of the organization. This assumption can be made since past research has shown that psychological ownership is positively related to pro-organizational stewardship behavior (e.g., Feldermann and Hiebl, 2022; Henssen et al., 2014) and could turn managerial agents into psychological principals (Sieger et al., 2013). Our findings on the complementarity between financial managers' autonomy, tenure and perceived organizational justice are therefore a first step in identifying 'roots' and 'routes' how organizations might support their financial managers in developing psychological ownership. Therefore, future research might explore in greater depth the effects of psychological ownership on the different roles of financial managers and on how these managers navigate the tensions between these roles.

B.5.2 Practical Implications

Our study could be relevant for companies that want to benefit from positive behavioral consequences of stock ownership but cannot or do not want to grant stock ownership to their financial managers and other employees (Zellweger, 2017). For those firms, investing in mechanisms that allow their financial managers to develop psychological ownership might be worthwhile, as it – like formal ownership – allows these managers to act in the best interests of the firm (Feldermann and Hiebl, 2022; Henssen et al., 2014; Sieger et al., 2013;). Since financial managers might respond to mechanisms based on different 'roots' and 'routes' in different ways, our findings show that it is advantageous to encourage their experience of psychological ownership by utilizing multiple mechanisms that operate through different 'roots' of and 'routes' to psychological ownership. By deliberately combining factors resonating with different 'roots' and 'routes', a two-fold effect can be obtained: First, a larger number of employees might respond to it, compared to using a single factor relying on a single 'root' or 'route', as the chosen one might not be equal attractive in developing ownership feelings for all employees, and, second, the impact on the development of psychological ownership is maximized (Pierce et al., 2003).

Additionally, as our results indicate that all justice dimensions reinforce the interaction effect between autonomy and tenure, our results might be of interest to companies that do not have the financial resources to keep up with comparable compensation of competitors on the labor market, which is reflected in terms of distributive justice. So, if companies cannot remunerate comparably well, they can rely on procedural justice, which has an even stronger effect on psychological ownership through its three-way interaction with autonomy and tenure than distributive justice. If there are no distinct processes in place, then organizations could rely on interpersonal or informational justice in combination with autonomy and tenure for increasing psychological ownership.

B.5.3 Limitations and Future Research

Although the contributions and implications discussed are important for theory and practice, our underlying research is subject to some limitations and opens up several avenues for future research. Although our hypothesized relationship and findings support previous work on psychological ownership and autonomy, tenure and organizational justice, causal inference with regard to direction of the hypothesized relationship could not be drawn, due to our cross-sectional research design. In line with this, longitudinal or experimental studies would be desirable that might test for the time horizon through which psychological ownership might emerge as well as how feelings of ownership might change when specific antecedents change or are manipulated.

Additionally, the found significant effects on the development of psychological ownership could be driven by other independent variables that have not been considered in our study. Addressing the omitted variable problem would require consideration of further independent or moderating variables and thus would go beyond our research design, as interpreting a more than three-way interaction lacks meaning (Braumann et al., 2020). However, we have operationalized the route of ‘having control’ by autonomy, the route of ‘intimate knowledge” by financial managers’ tenure, and the root of ‘having a place’ with regard to their perceived organizational justice. Thus, the found complementary effects only hold for this combination and operationalization of ‘roots’ of and ‘routes’ to psychological ownership. Given this, our research should be viewed as an important initial step towards future investigations that delve deeper into the interrelationship between the ‘roots’ of and ‘routes’ to psychological ownership. Thus, other operationalizations of the same routes as well as other combination of ‘roots’ of and ‘routes’ to psychological ownership should be analyzed. For example, following Zhang et al. (2021), the ‘having control’ route could also be operationalized as perceived power of employees, the ‘intimate knowing’ route could be measured by information accessibility and the ‘having a place’ motive could refer to employees’ trust in their organizational leaders. Additionally, the ‘investing the self’ route could be operationalized by employee driven-investment (cf. Zhang et al., 2021), while the ‘efficacy and effectance’ root could be examined in terms of one’s perceptions of self-efficacy (cf. Kim and Beehr, 2017). Thus, future research could examine the relationships between different antecedents of psychological ownership more closely.

References Section B

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C. How to Evoke Entrepreneurial Behavior in Middle Managers: Involve Them in Strategy Development and Create Psychological Ownership

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C.1 Introduction

Globalization, increasing competition and rapid technological progress challenge companies and demand skills to master these and other priorities (Rigtering and Weitzel, 2013). To remain or become successful and to gain competitive advantage, companies need to engage in innovation, opportunity recognition and exploitation (de Massis et al., 2021). The achievement of such goals is not just limited to top managers' behavior and choices, but, increasingly, middle managers' entrepreneurial behavior in existing organizations is seen as key driver for organizations' growth, profitability and success (Cooper, 2007; de Jong et al., 2015; Hornsby et al., 1999; Kellermanns et al., 2008; Pryor et al., 2015). For instance, middle managers' entrepreneurial behavior is reflected in important dimensions such as idea generation, opportunity recognition, risk-taking and proactiveness (Kuratko et al., 2005a). However, empirical evidence on the entrepreneurial behavior of middle managers remains scarce and fragmented (de Jong et al., 2015; Lau et al., 2012; Mustafa et al., 2018).

Existing research on the "complex nature of 'entrepreneurial behavior' suggests that a myriad of contextual influences act on the emergence of such behavior" (Mustafa et al., 2018, p. 285). For example, prior research indicates that organizational factors – such as management support, work discretion/autonomy, time availability, as well as reward systems and low organizational boundaries – might be necessary for the development of entrepreneurial behavior (Arz, 2017; Hornsby et al., 2009; Kuratko et al., 2004, 2005a, 2005b). Additionally, there is some evidence that the formal work context (e.g., horizontal or vertical participation, resource availability) and informal work context (e.g., trust in managers) have a positive impact on middle managers' entrepreneurial behavior (Rigtering and Weitzel, 2013). Empirical studies also suggest that job- and role-related factors (e.g., job and role design) could affect the development of entrepreneurial behavior (de Jong et al., 2015; Mustafa et al., 2018). Nonetheless, de Jong et al. (2015) and Zahra and Wright (2011) call for more research considering the contexts that determine the entrepreneurial behavior of middle managers. In this paper, we address this call by introducing middle managers' involvement in strategy development as an antecedent for entrepreneurial behavior. Such involvement is a factor fitting between a work/job-related and organizational context. It thus could be an important, but so far unexamined, antecedent for middle managers' entrepreneurial behavior. Consequently, our first research question is as follows:

Is middle managers' involvement in strategy development associated with their entrepreneurial behavior?

As changes in business environments make it difficult for organizational leaders to effectively render strategic decisions on their own only, middle managers' presence in organizational decision-making and strategy development has risen in recent years (Splitter et al., 2021; Wang et al., 2022). Yet, how middle managers may best contribute to strategy development is an ongoing debate in the literature, as their involvement can be either more content- or process-related, or both (Erhart et al., 2017; Pasch, 2019; Wolf and Floyd, 2017). Whereas their content-related involvement in strategy development refers to aspects such as their participation in decisions when choosing strategy, their process-related involvement in strategy development refers to aspects such as delivering technical and administrative support in the strategy development process (Erhart et al., 2017; Wolf and Floyd, 2017). How these dimensions of involvement differ in their effect on middle managers' entrepreneurial behavior is still unclear. Thus, our second research question is as follows:

How do different dimensions of middle managers' involvement in strategy development (i.e., content- and process-related involvement) affect their entrepreneurial behavior?

While prior empirical research has thus far focused on the mere existence and middle managers' perceptions of factors that allow for the development of their entrepreneurial behavior, to our best knowledge no research has yet closely investigated the psychology behind developing such behavior (Hornsby et al., 2009; Kuratko et al., 2005a, 2005b, 2004). As middle managers' participation in organizational affairs could create powerful psychological situations, more research considering psychological factors is needed to link organizational and job/work related factors to middle managers' entrepreneurial behavior (Lam et al., 2015; Mustafa et al., 2018). We argue that it is not only the *existence* and one's *perception* of organizational and job/work-related factors that allows for the development of middle managers' entrepreneurial behavior, but also, in line with prior research, the psychological experience that is triggered by such factors that might drive middle managers to behave entrepreneurially (cf. Kollmann et al., 2020; Mustafa et al., 2018). In particular, feelings of ownership towards the company could be seen as key determinant for reinforcing pro-organizational behaviors (Sieger et al., 2013; van Dyne and Pierce, 2004). Thus, we propose that middle managers' psychological ownership mediates the relationship between their involvement in strategy development and their entrepreneurial behavior. Therefore, our third research question is as follows:

Does psychological ownership mediate the relationship between middle managers involvement in strategy development and their entrepreneurial behavior?

By combining literature on strategy development, entrepreneurial behavior and psychological ownership, we provide a more fine-grained understanding of both the psychology underlying middle mangers' entrepreneurial behavior as well as the psychological dimension of their involvement in strategy work, as called for by Arnold et al. (2000), Wang et al. (2022), and Wooldridge et al. (2008). Additionally, we extend prior research on the antecedents of middle managers' entrepreneurial behavior by providing a thus far unexamined psychological link (i.e., psychological ownership) that allows organizational factors to translate into individual- level behavior (Kuratko et al., 2005a, 2005b; Rigtering and Weitzel, 2013).

The following sections of this paper provide: first, an overview of related literature and the development of hypotheses; second, the methods used to test our hypotheses; and third, the results of our analyses. The paper concludes with a discussion of the findings in terms of their theoretical and practical implications as well as our study's limitations and future research needs.

C.2 Theoretical Background and Hypotheses

C.2.1 Psychological Ownership

Psychological ownership is defined as the "state in which individuals feel as though the target of ownership or a piece of that target is 'theirs'" (Pierce et al., 2003, p. 86). Thus, psychological ownership refers to feelings of ownership and a sense of possession (van Dyne and Pierce, 2004), in which the target of ownership is experienced to "have close connections with the [individual's] self" (Pierce et al., 2003, p. 5). Accordingly, psychological ownership describes a psychological bond forged by an individual and the target of ownership, such as a middle manager and his/her employing organization (Pierce et al., 2004). If middle managers experience feelings of ownership, then they feel as though the organization is "theirs" (Pierce et al., 2001).

Psychological ownership is important for middle managers as it allows them to satisfy three fundamental needs (Pierce et al., 2003, 2013): efficacy and effectance, self-identity, and having a place. The ‘efficacy and effectance’ motive refers to an individual’s craving to experience causal efficacy in amending his/her environment (Pierce et al., 2001). Altering the environment implies the attempt to take possession over it, which can lead to feelings of ownership (Pierce et al., 2001). The self-identity motive refers to when psychological ownership is used by individuals for defining and expressing their selves to others (Pierce et al., 2003, 2001). The ‘having a place’ motive is rooted in human nature and leads to individuals aspiring for possession of their own territory/space, a ‘home’ (Pierce et al., 2001). Additionally, Pierce et al. (2003, 2001) highlight three major routes through which individuals develop psychological ownership: controlling the ownership target, gaining intimate knowledge about the ownership target, and investing the self into the ownership target. First, control, a fundamental characteristic of ownership, is an individual’s perception that one could produce positive outcomes due to skills, abilities and knowledge (Peng and Pierce, 2015; Pierce et al., 2001; Liu et al., 2012; Zhang et al., 2021). If the amount of control an individual can exert over a target object is high, the individual will be more likely to experience psychological ownership (Pierce et al., 2003, 2001; Zhang et al., 2021). Second, intimate knowledge about the target of ownership could lead to feelings of ownership as more information can deepen the relationship between an individual’s self and the target object (Pierce et al., 2003, 2001). Finally, investing the self into the target of ownership “allows an individual to see their reflection in the target and feel their own effort in its existence” (Pierce et al., 2003, p. 17) and thus may lead to psychological ownership.

Prior research has examined several organizational factors resonating with the three mentioned routes above that allow for the development of psychological ownership. These factors include participation in decision making, granting of autonomy, stock ownership or profit sharing (Henssen and Koiranen, 2021; Henssen et al., 2014; Liu et al., 2012). Moreover, there is empirical evidence for the positive effects of empowering, transactional, transformational and ethical leadership on psychological ownership (Avey et al., 2012; Bernhard and O’Driscoll, 2011; Kim and Beehr, 2017). Additionally, research has examined the consequences of psychological ownership, such as organizational commitment (Liu et al., 2012; Peng and Pierce, 2015), job satisfaction (Avey et al., 2012; Bernhard and O’Driscoll, 2011), organization-based self-esteem (Liu et al., 2012) or lower turnover intentions (Peng and Pierce, 2015). Prior studies also identify stewardship, entrepreneurial, and knowledge-sharing behavior as well as increased creativity as outcomes of psychological ownership (Feldermann and Hiebl, 2022; Henssen and Koiranen, 2021; Peng and Pierce, 2015; Sieger et al., 2013; Zhang et al., 2021). As a result, these outcomes make it desirable for firms to strive for employees to experience high degrees of psychological ownership (Pierce et al., 2003). However, to our best knowledge, the degree of middle managers involvement in strategy development has not yet been investigated as a potential antecedent of psychological ownership.

C.2.2 Involvement in Strategy Development and Psychological Ownership

Strategy development can be defined as “a more or less formalized, periodic process that provides a structured approach to strategy formulation, implementation and control” (Wolf and Floyd, 2017, p. 1758). Strategy development aims to influence the strategic direction of an organization in general, as well as to coordinate and integrate deliberate and emerging decision-making regarding strategy (Wolf and Floyd, 2017). However, as argued by Wooldridge and Floyd (1990, p. 240), “who is involved [in strategy development] may be every bit as important as how they are involved”. Accordingly, prior research has examined the role and function of top managers and/or the role and function of employees at other hierarchical levels, such as middle managers, in strategy development (Collier et al., 2004; Floyd and Wooldridge, 1992; Hart, 1992; Hart and Banbury, 1994; Schaefer and Guenther, 2016; Splitter et al., 2021; Wooldridge and Floyd, 1990).

Regarding “how” middle managers could be involved in strategy development, prior research indicates that such involvement can be either very intensive, limited or nonexistent (Hart, 1992; Hart and Banbury, 1994; Floyd and Wooldridge, 1992). If middle managers are involved in strategy development, their involvement can be either more content- or process- related, or both (Chenhall, 2005). When middle managers take part in strategic decisions or are influential with respect to strategic content, such involvement can be labeled content-related, whereas when they are involved in the provision of strategically relevant information or the preparation of schedules and strategy workshops, such involvement can be labeled more process-related (Ehrhart et al., 2017)

Regardless of the specific mode, prior research on middle managers’ involvement in strategy development provides evidence that it could affect firm-level outcomes such as organizational performance, efficiency, growth, quality, innovation and creativity positively (Hart and Banbury, 1994; Schaefer and Guenther, 2016; Wang et al., 2022; Wooldridge and Floyd, 1990). However, firm-level outcomes of managerial involvement in strategy development hardly could be achieved without effects on the individual middle-manager level first (Hutzschenreuter and Kleindienst, 2006). As middle managers’ participation in strategy making could change their psychology, attitudes and behaviors, prior research has examined such outcomes in terms of mental health, well-being, job satisfaction, voice behavior, organizational commitment, citizenship behavior, higher work performance and lower levels of turnover (Collier et al., 2004; Oswald et al., 1994; Wang et al., 2022; Wooldridge and Floyd, 1990). Additional studies have shown that involvement in strategy development could influence middle managers' perception, scanning and analysis of a firm's environment and strategic issues (Hutzschenreuter and Kleindienst, 2006; Oswald et al., 1997).

However, little is known about the psychological factors associated with middle managers' involvement in strategy development. Correspondingly, Arnold et al. (2000) and Wang et al. (2022) call for research to explore the psychological dimensions of middle managers' involvement in strategic affairs in more depth. We propose that middle managers' involvement in strategy development could cause them to experience psychological ownership for the following reasons. First, having control over organizational affairs is seen as an inevitable route for middle managers to develop feelings of ownership (Liu et al., 2012; Pierce et al., 2001; Zhang et al., 2021). A way to control organizational affairs and thus to develop feelings of ownership is to involve middle managers in strategy development, as it allows them to coordinate different organizational functions and to take part in strategic decision making (Erhart et al., 2017; Liu et al., 2021; Oswald et al., 1997, 1994). Second, investing one's self in terms of time, energy, and other personal resources into the strategic affairs of the ownership target can enhance the development of psychological ownership (Pierce et al., 2001; Zhang et al., 2021). Participation in strategy development requires middle managers' investment of time, skills and knowledge necessary for such strategy work and thus might increase feelings of ownership. Third, involvement in strategy development might allow middle managers to perceive that they successfully take part in strategically relevant actions and to master strategic tasks, which in turn might lead to experienced self-efficacy, and could enhance the development of psychological ownership (Fay & Frese, 2001; Lam et al., 2015; Pierce et al., 2001; Wang et al., 2022). Finally, middle managers' involvement in strategy development could trigger and increase their feelings of ownership in a company's common vision as it "builds trust in leaders and attachment to their ideas" (Collier et al., 2004, p. 69), and allows for the integration of middle managers' "personal goals into organizational goals" (Wang et al., 2022, p. 2). The described mechanisms can be expected to hold for both content- and process-related involvement because, in both modes, middle managers invest 'themselves' in strategically relevant matters, get a closer understanding of their organizational leaders' actions and may experience increased control over their employer organization's strategy. Due to these reasons, we propose:

Hypothesis 1 (H1): Content-related involvement of middle managers in strategy development is positively related to their psychological ownership.

Hypothesis 2 (H2): Process-related involvement of middle managers in strategy development is positively related to their psychological ownership.

C.2.3 Involvement in Strategy Development, Psychological Ownership and Entrepreneurial Behavior

Based on previous research, Kuratko et al. (2005a, 2005b) and Rigtering and Weitzel (2013) identify three core characteristics of middle managers' entrepreneurial behavior in existing organizations. First, idea generation, opportunity recognition and idea implementation refer to the discovery and exploitation of entrepreneurial and profitable opportunities and ideas (Kuratko et al., 2005a; Sieger et al., 2013). Second, proactiveness refers to doing "what is necessary to bring pursuit of an entrepreneurial opportunity to competition" (Kuratko et al., 2005b, p. 277). Third, risk-taking refers to employees who challenge the status quo rather than passively adapt to it, and who might act even without permission of their superiors or sell controversial issues (Fay and Frese, 2001; Rigtering and Weitzel, 2013).

Prior research suggests numerous factors influence the development of middle managers' entrepreneurial behavior. Foremost, Hornsby et al. (2009, 2002, 1999) and Kuratko et al. (2005a, 2005b) provide essential contributions on the following five main organizational factors. First is management support, which "indicates the willingness of managers to facilitate and promote entrepreneurial activity in the firm", for instance by championing innovative ideas and provision of resources (Hornsby et al., 2002, p. 259). This allows middle managers to engage in entrepreneurial actions. Second is work discretion/autonomy, which includes the provision of decision-making power as well as the delegation of authority and responsibility (Hornsby et al., 2009). Third is an appropriate use of rewards, which are linked to and thus can reinforce entrepreneurial behavior (Hornsby et al., 2002; Kuratko et al., 2005b). Fourth is the provision of resources and time availability, which encourages and enables middle managers to engage in risk-taking, experimental actions and to pursue their ideas and actions (Kuratko et al., 2005a, 2005b). At last, fifth is a supportive organizational structure and culture that fosters "administrative mechanisms by which ideas are evaluated, chosen, and implemented" (Hornsby et al., 2002, p. 253), which seems to be necessary for middle managers to engage in entrepreneurial actions.

Yet, empirical evidence on the entrepreneurial behavior of middle managers remains scarce (Lau et al., 2012; Mustafa et al., 2018). Thus, Zahra and Wright (2011) call for more research considering the context that determines middle managers' entrepreneurial behavior. At the same time, research on the psychological factors that cause involvement in strategy development and lead to behavioral consequences of middle managers is still rare. That is why Wooldridge et al. (2008) call for more research on strategy development that considers the psychological foundations underlying managers' behavior. We address these calls by introducing middle managers' involvement in strategy development as a potential antecedent to their entrepreneurial behavior. Involvement cannot only be expected to change managers' perception, but also their behavior (Collier et al., 2004). As a result, the following dynamics indicate that involvement in strategy development might stimulate middle managers' entrepreneurial behavior. First, middle managers' involvement in strategy development could be seen as form of management support that might function as signal that the organization's top managers are confident about their middle managers' abilities to master strategic tasks. This in turn could cause feelings of empowerment and self-efficacy, which might strengthen middle managers' trust in their organizational leaders (Collier et al., 2004; Lee et al., 2017; Mustafa et al., 2018). Indeed, previous studies have shown that middle managers' empowerment and trust in top managers are important factors for promoting creativity and entrepreneurship (Lee et al., 2017; Moriano et al., 2014; Rigtering and Weitzel, 2013). Second, to pursue entrepreneurial opportunities and encourage entrepreneurial actions, resource availability and allocation through a formalization of systems and processes are vital (Mustafa et al., 2018; Williams et al., 2021). By processing information, coordination and planning as well as by shaping these processes (process-related involvement in strategy development), middle managers could be impactful in the deployment of resources (Erhart et al., 2017). Thus, process-related involvement in strategy development might enable middle managers to carve out resources for themselves, which they can then use entrepreneurially, as well as to create an entrepreneur-friendly work environment for employees, which allows others to engage in entrepreneurial behavior. Indeed, helping others to engage in entrepreneurial actions is a characteristic of entrepreneurial behavior itself (Mustafa et al., 2018; Sieger et al., 2013; Wang et al., 2022). Accordingly, process-related involvement in strategy development might contribute to an entrepreneur-friendly work environment, which allows middle managers and other employees to engage in entrepreneurial behavior. Thus, we propose that:

Hypothesis 3 (H3): Process-related involvement of middle managers in strategy development is positively related to their entrepreneurial behavior.

The formal work context of middle managers is characterized by task specialization and formalization (Rigtering and Weitzel, 2013). According to Rigtering and Weitzel (2013, p. 341), "task specialization can be divided into horizontal participation, the extent to which work activities are highly specialized, and vertical participation, the extent to which responsibilities are marked out". Involvement in strategy development could be seen as both vertical and horizontal participation, as it includes some responsibility about decision-making (vertical participation) as well as requires special knowledge and skills to perform strategy-related work (horizontal participation). Existing research has shown that vertical intervention in one's job design more favorably cause entrepreneurial behavior compared to horizontal interventions (de Jong et al., 2015). That is, the provision of freedom and power to act could be seen as stimulus for entrepreneurial behavior, as it encourages recognition and exploitation of opportunities (Mustafa et al., 2018). Thus, through involvement in strategy development, middle managers are in a position that allows for the embracement of novel and unique ideas and thus their engagement in entrepreneurial behavior (Lee et al., 2017). Such decision-making latitude regarding strategy development (i.e., content-related involvement) is particularly important for employees in managerial positions, such as middle managers, as it encourages the proactivity and risk-taking that is essential for opportunity recognition and, thus, entrepreneurial behavior (Arend et al., 2017; Heinonen and Toivonen, 2008; Moriano et al., 2014; Mustafa et al., 2018; Posch and Garaus, 2020). Ultimately, middle managers' content-related involvement in strategy development might result in their more pronounced entrepreneurial behavior. Therefore, we propose:

Hypothesis 4 (H4): Content-related involvement of middle managers in strategy development is positively related to their entrepreneurial behavior.

However, scholars claim that behavioral alterations first require corresponding feelings and perceptions related to this behavior (Sieger et al., 2013). We argue that feelings of ownership towards the company are a key determinant for reinforcing entrepreneurial behavior for the following reasons. First, a motive for experiencing psychological ownership is an individual's inherent need for efficacy and effectance (Pierce et al., 2001). Self-efficacy refers to middle managers who are confident that they can successfully take actions and master specific tasks

(Fay and Frese, 2001), which might lead them to explore and alter their organizational environment (Pierce et al., 2001). One way to shape the organization's environment is to perform entrepreneurial tasks and engage in activities such as "generating new ideas, identifying and exploiting entrepreneurial opportunities" (Sieger et al., 2013, p. 369). Therefore, we argue that self-efficacy and having control as underlying mechanisms that enhance psychological ownership are also related to entrepreneurial behavior (Chouchane et al., 2021; Sieger et al., 2013; Zhao et al., 2005). Second, feelings of ownership could induce middle managers to feel a deep responsibility for their organization, to invest their time and energy and to take risks in order to benefit and advance the cause of the organization (Pierce et al., 2001; van Dyne and Pierce 2004). Feeling responsible could also promote middle managers to reinforce organizational change, to generate ideas and exploit them (Pierce et al., 2001; Sieger et al., 2013). Thus, a sense of responsibility and investment of middle managers' resources should cause them to experience psychological ownership and, as a result, exhibit entrepreneurial behavior. Third, psychological ownership might be associated with feelings of empowerment (Kim and Beehr, 2017; van Dyne and Pierce 2004). Empowered middle managers believe that they have an impact and can act in a self-determined manner, increasing the likelihood that they will be innovative and creative (Aggarwal et al., 2020; Sieger et al., 2013), two important aspects of entrepreneurial behavior (Kuratko et al., 2005b). Thus, we propose:

Hypotheses 5 (H5): Middle managers' psychological ownership towards their company is positively related to their entrepreneurial behavior.

C.2.4 The Mediating Role of Psychological Ownership

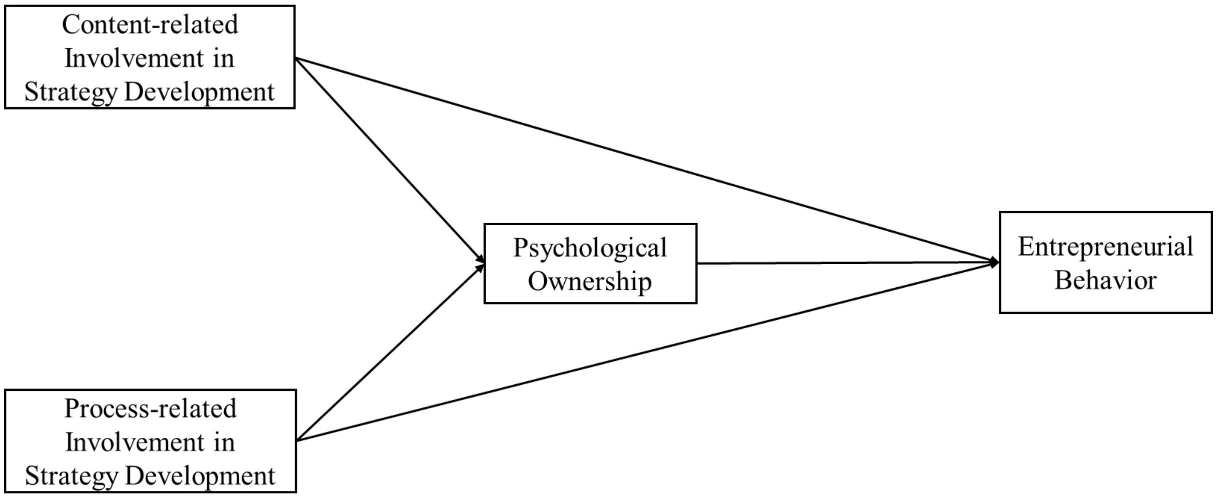
Prior research indicates that, inasmuch as those antecedents exist and are perceived, middle managers might be stimulated to engage in entrepreneurial behavior (Kuratko et al., 2005a). However, we argue that a model based solely on the existence and perceptions of organizational antecedents for translating into entrepreneurial behavior is likely to be underspecified. The existence and perception of organizational antecedents that are supposed to enhance middle managers' entrepreneurial behaviors might not necessarily require them to feel and act like entrepreneurs. For example, Kollmann et al. (2020) argue that, on a team level, interaction patterns (such as participative decision making) require psychological processes (such as identification) for a translation into outcomes (such as entrepreneurial orientation). This might also hold for an individual level, at which interaction patterns (such as content- and/or process-related involvement in strategy development) require a psychological experience (such as psychological ownership, a concept like Kollmann et al. (2020) concept of identification) to translate into outcomes (such as entrepreneurial behavior). However, the decisive factor might be a psychological experience – such as self-efficacy, identification or psychological ownership – that is triggered by and thus links organizational-level factors to individual-level behaviors (Mustafa et al., 2018). But research addressing psychological linkages between organizational factors and middle managers' entrepreneurial behavior is still in its infancy. Although there is a rising interest in examining the relevance of self-efficacy in an entrepreneurial context (for an overview, see Newman et al., 2019), so far little is known about the role of psychological ownership in the entrepreneurial process in existing organizations. This is somewhat surprising, as prior research indicates that emotions might play a decisive role in predicting entrepreneurial behavior (Cardon et al., 2009; Hsu, 2013). For example, Hsu (2013) found that psychological ownership of entrepreneurs is positively linked to their intention to reenter a new business after a prior business exit. In a similar vein, a study by Zhu et al. (2017) shows that entrepreneurs experiencing high levels of psychological ownership show high levels of persistence with their venture despite setbacks. These exemplary studies focus on "entrepreneurs" in early stages of the entrepreneurial process. Regarding entrepreneurial behavior in existing organizations, Sieger et al. (2013) identify employee's entrepreneurial behavior as a mediator that links psychological ownership to firm performance. However, none of these studies places psychological ownership into a larger context of organizational factors that could enhance middle managers' entrepreneurial behavior. In line with our above-developed direct-effect hypotheses, we address this gap in literature by examining the role of psychological ownership as mediator between middle managers' involvement in strategy development and their entrepreneurial behavior. Thus, we propose:

Hypothesis 6 (H6): Middle managers' psychological ownership mediates the relationship between their content-related involvement in strategy development and their entrepreneurial behavior.

Hypothesis 7 (H7): Middle managers psychological ownership mediates the relationship between their process-related involvement in strategy development and their entrepreneurial behavior.

A summary of our hypotheses can be found in Figure C-1.

Figure C-1. Theoretical Model



C.3 Methods

C.3.1 Sample and Data Collection

To test our hypotheses, we draw on the survey responses of 176 financial managers of non-listed German companies with a minimum of 10 employees. We exclude smaller firms as they usually do not have clear financial manager positions (Erhart et al., 2017). In addition, we also excluded firms from the financial services industry due to their idiosyncratic organizational structures, strategy development and management control processes (Gooneratne and Hoque, 2013). We addressed the highest ranked financial manager, which, depending on firm size or legal form, was the financial manager, head of accounting or the controller. All these positions usually can be classified as middle managers (Van Doorn et al., 2022), and are more likely to be involved in strategy development than employees at lower hierarchical levels. Additionally, prior research indicates that employees at the managerial level are more likely seen to exhibit psychological ownership than employees at the operational level (cf. van Dyne and Pierce, 2004). Furthermore, entrepreneurial behavior is a key characteristic of organizational decision makers, which holds for employees at the managerial level (Kellermans et al., 2008).

We acquired archival data (e.g., company name and industry affiliation) of companies meeting the above criteria from a leading German credit agency. Based on this data, contact information of the firms were gathered (email addresses and/or telephone numbers). The data were collected in two rounds between March 2018 and July 2019. In the first round of data collection, we invited the financial managers to take part in our survey by telephone. If the respondents agreed to participate, we sent them a structured questionnaire by email, which they could fill out and send back to us. For those managers which we could not reach by telephone, an email invitation with the structured questionnaire was sent to their general email addresses (e.g., office@firm.de). The second round of data collection was intended to increase the number of responses. For this reason, a professional market research agency was employed, which implemented the same questionnaire as in the first wave in a web-based survey format. In the second round of data collection, managers that had not yet participated in the first round of data collection were addressed. In total, we received 233 responses during the first and second round of data collection. Due to missing data, 176 questionnaires were usable for our below analyses.

C.3.2 Measures

The questionnaire was developed based on previously tested and validated English-language measurement scales. Apart from the psychological ownership scale, for which a validated German version by Sieger et al. (2013) was already available, we translated the measurement scales into German for the survey. To assure the accuracy of these translations, we followed the back-translation approach suggested by Brislin (1970), comparing a re-translated English version and the original English version. No major differences were found that could affect the validity of our measurements, but we slightly modified the German version of our questionnaire as a result.

Entrepreneurial behavior. For measuring entrepreneurial behavior, we relied on a 7-point Likert scale created and validated by Sieger et al. (2013).

Involvement in strategy development. For measuring middle managers' involvement in strategy development, we relied on a multi-item construct by Erhart et al. (2017). The scale consists of 7 items asking the respondents to indicate the extent to which the statements apply to them and their organization. As expected, performing a principal component analysis resulted in a two-factor solution referring to the two dimensions of middle managers' involvement in strategy development: content-related involvement, and process-related involvement.

Psychological ownership. We measured psychological ownership using a 7-point Likert scale originally developed by Pierce et al. (2004).

Besides these core variables of interest, we controlled for several further variables.

Respondent's age. We measured the respondents' age in years at the time when they filled out our questionnaire because prior studies have highlighted the influence of respondents' age on their entrepreneurial behavior (Chouchane et al., 2021; de Jong et al., 2015; Lévesque and Minniti, 2011).

Respondent's gender. As gender was sometimes found to be related to entrepreneurial behavior, we controlled for respondent's gender using a dummy variable coded 0 for female respondents and 1 for male respondents (de Jong et al., 2015; De Massis et al., 2021; Kellermans et al., 2008).

Respondent's tenure. Also, organizational tenure of employees might affect their entrepreneurial actions (Chouchane et al., 2021; de Jong et al., 2015; Kellermans et al., 2008), as well as their feelings of ownership (Pierce et al., 2001; van Dyne and Pierce, 2004). We therefore controlled for tenure, measured as the number of years for which the respondents had worked for their organization at the time of survey response.

Industry. Differences between industries can influence entrepreneurial activities, especially between manufacturing and non-manufacturing firms (Antoncic and Hisrich, 2001). Thus, we controlled for a company's main industry affiliation and created a dummy variable, coded "0" for companies primarily belonging to the non-manufacturing industry and "1" for companies primarily belonging to the manufacturing industry.

Firm size and firm age. Controlling for firm size and age was necessary, since prior research indicates that both have an impact on the entrepreneurial actions of middle managers (Antoncic and Hisrich, 2001; Mustafa et al., 2018). Thus, we controlled for firm size, measured by the total number of employees, and firm age, calculated as the difference between the year of data collection and the company's year of founding.

Data collection. To rule out the possibility that our two rounds of data collection might have affected our regression analysis results, we created a dummy variable coded 1 for the second wave of data collection and 0 for the first wave of data collection.

C.3.3 Data Analysis

Structural equation modelling using Smart PLS (partial least squares) is particularly suitable for testing our hypothesized relationships for the following reasons: (1) our model primarily exists of latent variables at the observation level, and on a theoretical level is set to test the relationships between these latent variables; (2) the independent variables in our model, i.e., content- and process-related involvement in strategy development, are nonnormally distributed and SEM provides robust estimation results in such a setting; (3) this also holds for the relatively small sample size of N = 176; and (4) SEM (structural equation modelling) allows for the estimation of the model in combination with a mediation effect in a single analysis (Hair et al., 2012; Sarstedt et al., 2022) Furthermore, our 'balanced model' (the number of exogenous variables is the same as the number of endogenous variables) exhibits characteristics of models that are typically addressed by using partial least squares structural equation modeling in Smart PLS (Hair et al., 2012; Sarstedt et al., 2022).

C.3.4 Test for Potential Biases

As our survey is based on a single-respondent approach, common method bias might influence our findings (Podsakoff et al., 2003). To mitigate this bias ex ante, we separated the measurements of the dependent and independent variables in our questionnaire, secured our respondents complete anonymity, and conducted extensive pre-tests of our questionnaire (Podsakoff et al., 2003). Ex post, we used statistical controls. First, we performed Harman's single-factor test, which investigates whether a single factor explains most of the variance in a data-set. We thus performed an exploratory factor analysis including the main variables of interest (Podsakoff et al., 2003). We obtained four factors with Eigenvalues > 1, which explain 74.67 per cent of the total variance. The first factor explains 23.50 per cent of the total variance, indicating that common method bias is of minor importance in our results (Posch, 2020). However, as Harman's single factor test is controversial in detecting the effects of common method variance (Podsakoff et al., 2003; Posch, 2020), we additionally applied the correlational marker variable technique (e.g., Lindell & Whitney, 2001; Richardson et al., 2009; Simmering et al., 2015). We added a further, theoretically unrelated, marker variable: "venture capital financing". This was measured as a single-item dummy variable, based on asking our respondents: "Has your company ever received venture capital funding?". We added this variable to the existing set of variables (Lindell & Whitney, 2001; Richardson et al., 2009). Thereby, the smallest absolute observed correlation between our main variables of interest and the marker variable could be interpreted as the effect of common method bias (Richardson et al., 2009; Simmering et al., 2015). This smallest absolute correlation between the marker variable and our main variables of interest is at -0.051 (see Table C-1), which is rather low. Therefore, in conjunction with the results of Harman's single factor test, we see no indications of common method bias in our data.

In addition, we have checked for the potential issue of non-response bias in our study. As indicated by van der Stede et al. (2005), non-responses could be driven by both individual respondent's characteristics as well as by organizational characteristics. As we can identify non-responding organizations from the acquired archival data, we compared their characteristics (firm size and industry affiliation) with those of the responding organizations (cf. Posch 2020). We performed a Mann-Whitney U test for firm size and a chi-square test for industry affiliation. The results of these analyses (not tabulated) indicate that there were no significant differences between responding and non-responding organizations in terms of average size and industry affiliation, delivering no indications that our results would be affected by a non-response bias. Furthermore, we have checked for a potential bias due to multicollinearity concerns and thus have calculated variance inflation factors. The variance inflation factors range from 1.042 to 1.793 and thus are all well below the generally accepted threshold of 10 (Hair et al., 2010). Finally, since our data were collected in two waves, we have checked if the data gathered from these groups are significantly different from each other and thus might affect our results. To rule out this possibility, we have run a Mann-Whitney U Test for our main variables of interests. The asymptotic significance for all variables is >0.05 (untabulated). As there is no significant difference between the means of the variables in the two rounds of data collection, we could not find an effect of the round of data collection on our regression analysis results.

C.4 Results

The average company in our sample employed 291 employees and is 43.75 years old. 24 per cent of the included companies belonged to the manufacturing sector, and the remaining 76 per cent belong to the non-manufacturing sector, such as retail or other services. 73 per cent of the participating middle managers were male and, on average, the respondents were 47.59 years old and have worked for their employer organization for 12.89 years. The correlations between all variables are presented in Table C-1.

Table C-1. Correlations

	ENTR	INVOLV_C	INVOLV_P	PO	Tenure	AgeCFO	Gender	FirmAge	FirmSize	Industry	DataColl	VentCap
ENTR	1											
INVOLV_C	0.185	1										
INVOLV_P	0.275	0.637	1									
PO	0.306	0.165	0.005	1								
Tenure	0.046	0.040	-0.108	0.239	1							
AgeCFO	0.146	0.103	0.068	0.118	0.549	1						
Gender	0.067	-0.013	0.065	0.019	0.060	0.150	1					
FirmAge	-0.089	0.018	0.004	0.068	0.051	0.038	0.111	1				
FirmSize	-0.002	-0.010	0.053	-0.078	-0.061	0.022	0.133	0.060	1			
Industry	0.012	0.018	0.009	-0.003	-0.027	0.043	0.163	0.184	-0.047	1		
DataColl	0.076	0.062	0.081	-0.020	-0.118	-0.074	-0.003	0.013	-0.044	0.110	1	
VentCap	-0.054	0.056	0.054	-0.051	-0.090	-0.014	0.130	-0.084	-0.013	0.007	-0.055	1

Note: ENTR is entrepreneurial behavior, INVOLV_C is content-related involvement in strategy development, INVOLV_P is process-related involvement in strategy development, PO is psychological ownership, DataColl is a dummy variable to control for round of data collection and VentCap is a marker variable to address common method bias.

C.4.1 Measurement Model

Discriminant and convergent validity are validated by the evaluation of the measurement model, while the hypothesized relationships are validated by the assessment of the structural model (Hair et al., 2019, 2017). For assessing the constructs' reliability, we relied on Cronbach's alpha and composite reliability, for assessing convergent validity we relied on factor loadings and the average variance extracted, and for assessing discriminant validity we relied on the heterotrait-monotrait ratios (HTMT). Table C-2 shows the results for the evaluation of our measurement model, which indicates that all criteria are above the generally accepted thresholds.

Table C-2. Evaluation of measurement model

		Convergent validity		Construct reliability		Discriminant validity
Latent construct	Indicator	Indicator loadings*	AVE	CR	Cronbach's alpha	HTMT confidence interval contains 1?
Psychological ownership	This is MY organization.	0.852	0.742	0.934	0.913	no
	I sense that this organization is OUR company.	0.847				
	I feel a very high degree of personal ownership for this organization	0.896				
	I sense that this is MY company.	0.894				
	This is OUR company.	0.817				
Individual-level entrepreneurial behavior	I often make innovative suggestions to improve our business.	0.807	0.652	0.828	0.822	no
	I often generate new ideas by observing the world.	0.749				
	I often come to new ideas when observing how people interact with our products and services.	0.865				
	I often generate new ideas by observing our customers.	0.805				
Process-related involvement in strategy development	During the analysis and design phase of the strategy process, the controlling department or the controlling responsible performs the following tasks:		0.685	0.879	0.849	no
	- Support of objective setting (e.g., by quantifying corporate goals).	0.861				
	- Provision of strategically relevant information/analyses (e.g., on internal factors or through continuous monitoring of competition, market, customers).	0.876				
	- Administration/coordination of the strategy process.	0.777				
	- Challenging of management’s proposals (e.g., regarding realism, objectives and assumptions).	0.793				
Content-related involvement in strategy development	The controlling department or the controlling:		0.878	0.981	0.931	no
	- consults management on own initiative with proposals regarding the strategic development of the firm.	0.915				
	- is influential with respect to strategic matters.	0.960				
	- takes part in decisions when choosing strategy.	0.935				

* Indicators with factor loadings below 0.7 were excluded from the analysis and are not tabulated.

Furthermore, we have checked the cross loadings and the Fornell-Larcker criterion (not tabulated), which also indicate a good discriminant validity. In addition to the HTMT confidence interval (see Table C-2), Table C-3 provides an overview on the HTMT ratios, which are all below the generally accepted threshold of 0.9 (Henseler et al., 2015).

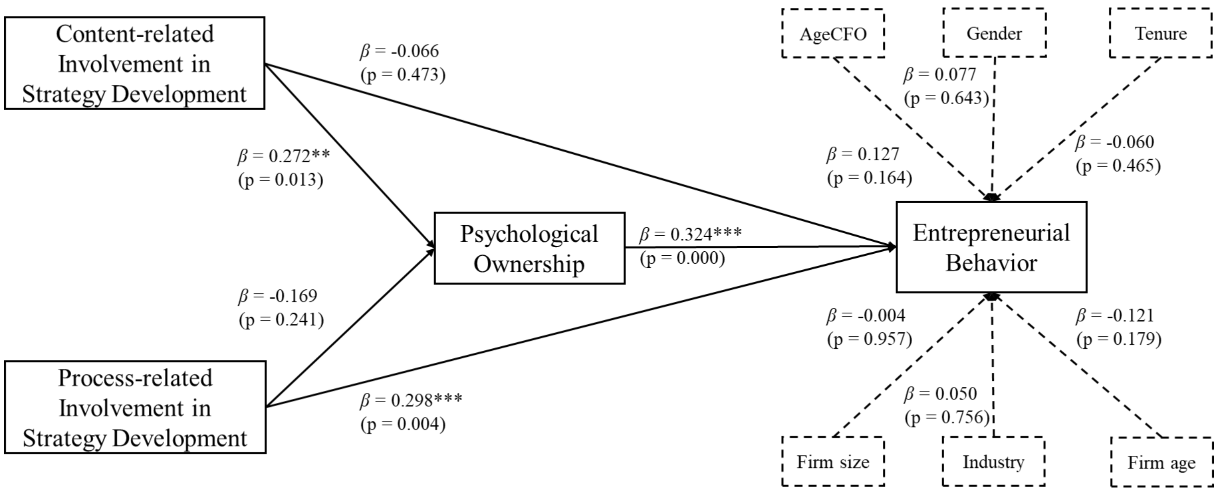
Table C-3. Heterotrait-Monotrait ratios

	1.	2.	3.
1. Content-related involvement in strategy development			
2. Process-related involvement in strategy development	0.715		
3. Psychological ownership	0.169	0.087	
4. Entrepreneurial behavior	0.201	0.316	0.345

C.4.2 Structural Model

Figure C-2 provides an overview of the results of our hypothesized structural model.

Figure C-2. Results of structural model



Based on our findings, we find strong support for content-related involvement in strategy development as an antecedent of psychological ownership at a level of p = 0.013, which itself is an antecedent of entrepreneurial behavior at a level of p = 0.000 (see Figure C-2). Thus, our findings support our hypotheses H1 and H5. Contrary to our assumptions, we do not find a significant relationship between middle managers' content-related involvement in strategy development and entrepreneurial behavior. We thus could not confirm H4. Additionally, we could not find a significant relationship between process-related involvement in strategy development and psychological ownership (p = 0.241), and thus need to reject hypothesis H2. By contrast, our findings confirm hypothesis H3 that suggested a significant effect (p = 0.004) of middle managers' process-related involvement in strategy development on entrepreneurial behavior. The effect sizes of the hypothesized effects are shown in Table C-4. The adjusted R^2 for our structural model is 0.154*** (p = 0.008) and the R^2 is 0.198*** (p = 0.000).

Table C-4. Effect sizes of the hypothesized relationships

	Effect size (f^2)	Effect
INVOLV_C → ENTR	0.003	no effect
INVOLV_C → PO	0.046	small effect
INVOLV_P → ENTR	0.062	small effect
INVOLV_P → PO	0.018	no effect
PO → ENTR	0.118	medium effect

Note: INVOLV_C is content-related involvement in strategy development, INVOLV_P is process-related involvement in strategy development, PO is psychological ownership, ENTR is entrepreneurial behavior.

Our results for the proposed fully mediated hypothesized model, as suggested in hypothesis H6 and hypothesis H7, are displayed in Table C-5.

Table C-5. Indirect effects of the mediated hypothesized model

	Indirect effect	t-Value	p-Value	95% Confidence interval	Significant?
INVOLV_C -> ENTR	0.088	2.038	0.042	[0.014 - 0.182]	**
INVOLV_P -> ENTR	-0.055	1.004	0.297	[-0.175 - 0.032]	

Note: INVOLV_C is content-related involvement in strategy development, INVOLV_P is process-related involvement in strategy development and ENTR is entrepreneurial behavior.

Our results support hypothesis H6, that suggested psychological ownership mediates the relationship between content-related involvement in strategy development and entrepreneurial behavior. In this case, the indirect effect is significant at 0.088 (p = 0.042) and is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.014 to 0.182), indicating that mediation occurs. Regarding the mediating effect of psychological ownership on the relationship between process-related involvement in strategy development and entrepreneurial behavior, as proposed in hypothesis H7, we could not find a significant mediation effect. Hypothesis H7 needs to be rejected due to the following reasons: (1) Our results could not identify a significant relationship between process-related involvement in strategy development and entrepreneurial behavior mediated by psychological ownership (indirect effect at $\beta = -0.055$; $p = 0.297$; see Table C-5); and (2) as revealed by a 95% bootstrap confidence interval (-0.175 to 0.032), this indirect effect is not statistically different from zero.

C.5 Discussion and Implications

Our study investigated whether middle managers' involvement in strategy development is related to their entrepreneurial behavior and whether this relationship is mediated by their psychological ownership. Applying a mediation model to a sample of 176 financial managers in Germany, our findings reveal that only middle managers' process-related involvement in strategy development directly enhances their entrepreneurial behavior. However, our results indicate that psychological ownership only affects middle managers' entrepreneurial behavior in cases where their involvement is content-related, rather than process-related. Thus, we only found psychological ownership to mediate the relationship between middle managers' content-related strategy involvement and their entrepreneurial behavior, but not the relationship between process-related involvement and entrepreneurial behavior.

C.5.1 Theoretical Implications

A first contribution of our study is to the literature on strategy development. We address calls by Arnold et al. (2000), Wang et al. (2022), and Wooldridge et al. (2008) to deepen our understanding of the psychological dimensions of both middle managers' involvement in strategy work and of their behavior. Combining literature on strategy development with insights from the theory of psychological ownership provides a more fine-grained picture on the psychology underlying managerial involvement in strategy development and how it translates into behavioral consequences. Our results reveal that middle managers' involvement in strategy development could either be content-related or process-related, thus corroborating prior research regarding distinctions of strategy involvement (e.g., Chenhall, 2005; Wolf and Floyd, 2017). Based on theoretical arguments and empirical evidence, we introduce middle managers' involvement in strategy development as a way to develop psychological ownership. We ascribe this finding to middle managers' involvement in strategy development as a way to give them partial control over strategic organizational affairs, and as indicated by prior research, such control serves as an important route to develop feelings of ownership (Liu et al., 2012; Pierce et al., 2003, 2001). However, it seems that this mechanism only works when middle managers are highly involved in the contents of strategy development, and not when involved only in the strategy development process. Thus, it seems that how middle managers are involved in strategy development is at least as important as the question of whether they are involved. Influence over strategic goals and organizational long-term direction – i.e., content-related involvement – seems to be more important for developing psychological ownership than influence over strategic information processing and coordination of the strategy development process (i.e., process-related involvement).

At the same time, our results suggest that, in the absence of psychological ownership, only process-related involvement in strategy development can lead middle managers to behave entrepreneurially. Thus, we identify a strong effect of middle managers' process-related involvement on their entrepreneurial behavior. According to Williams et al. (2021, p. 4), "identifying novel and creative ways to bring, assemble, and transform resources to launch, grow, and sustain ventures" might help to "encourage and guide entrepreneurial behavior". One way to identify novel and creative ways to bring, assemble and transform resources may be middle managers' process-related involvement in strategy development, as it allows for processing information and resources, and coordinating planning and different organizational functions through allocation of information and other resources (cf. Erhart et al., 2017). Surprisingly, we found that, for middle managers not experiencing psychological ownership, their content-related involvement in strategy development is not related to their entrepreneurial behavior. Involving middle managers in content-related strategy development to promote their entrepreneurial actions does not unfold the same positive effects as for their process-related involvement. Thus, we could not confirm prior research, which suggests that decision-making latitude regarding a firm's strategy (i.e., content-related involvement) could encourage middle managers' opportunity recognition, proactivity and risk-taking as central elements of entrepreneurial actions (Arend et al., 2017; Heinonen and Toivonen, 2008; Moriano et al., 2014; Mustafa et al., 2018; Posch and Garaus, 2020).

A second contribution of our study is to literature on entrepreneurial behavior of employees in existing organizations. So far, prior research often refers to the existence and employees' perception of organizational and job- and work-related factors that could promote entrepreneurial behavior, but mostly neglects the psychology behind the development of such behavior (e.g., Hornsby et al., 2009, 2002; Kuratko et al., 2005a, 2005b; Rigtering and Weitzel, 2013). We provide empirical support for the arguments of some scholars who suggest that psychological factors, such as psychological ownership, might play a decisive role for the translation of organizational and job- and work-related antecedents into employee's entrepreneurial behavior (Mustafa et al., 2018; Sieger et al., 2013). Interestingly, regarding middle managers' content-related involvement in strategy development, our findings emphasize that its effect on the development of entrepreneurial behavior is prevalent only when they experience psychological ownership. Involving middle managers who do not experience psychological ownership in content-related strategy development does not seem to promote their entrepreneurial actions. This could be because middle managers, who are involved in strategy development in terms of content, no longer try to get into this position and thus may lower or stop their entrepreneurial behavior altogether. However, this does not hold for a process-related involvement in strategy development. For the latter case, our findings suggest that middle managers exhibit entrepreneurial behavior without experiencing psychological ownership. Therewith, we address calls by Mustafa et al. (2018) and Zahra and Wright (2011), who called for more research considering the context that determines entrepreneurial behavior of employees, especially regarding psychological factors.

C.5.2 Practical Implications

In terms of practical implications, our results offer guidance for companies that strive for corporate entrepreneurship at the organizational level. Many organizations seek ways to foster corporate entrepreneurship (Kuratko et al., 1990). However, for corporate entrepreneurship to flourish at the firm level, first entrepreneurship at the individual level needs to occur, which makes individual actors' entrepreneurial behavior so important (Hornsby et al., 2002; Kuratko et al., 2005a). As indicated by our results, middle managers' involvement in strategy development can cause their engagement in entrepreneurial behavior as well as their development of psychological ownership, both of which are seen as beneficial for firms striving for success. Our findings thus imply that corporations might need to rethink how they can evoke corporate entrepreneurship, and not only focus on the top management but focus on the middle management, too. One way to foster middle managers' entrepreneurial behavior is to more closely involve them in strategy development processes. Should this not be restricted to only the strategy development process, but also entail content-related involvement, such involvement comes with the benefit that middle managers might develop strong feelings of psychological ownership. However, care should be taken when involving middle managers into strategy development regarding strategic content, as this could impede their entrepreneurial actions when they do not experience ownership feelings.

C.6 Limitations and Future Research Agenda

Our study is subject to some limitations. First, although previous work on the antecedents of entrepreneurial behavior and effects of employee's involvement in strategy development supports the causal relationship argued for in our study, due to the cross-sectional design, causality between the variables of interest could not be proven. Future research that addresses a potential bidirectional or reversed effect between involvement in strategy development and entrepreneurial behavior (cf. Bernhard & O'Dricsoll, 2011; Erhart et al., 2017; Heinonen and Toivonen, 2008) is needed. Studies based on longitudinal, time-lagged, or experimental data may shed light on how entrepreneurial behavior of middle managers could cause their involvement in strategy development and thus could address potential endogeneity concerns regarding a reversed causality. Nevertheless, based on the strong theoretical arguments above, we are confident that our results regarding the hypothesized relationships are robust. Second, data collection took place in Germany, which makes the generalizability of our results somewhat uncertain. Further studies are necessary to infer whether our findings might hold in other cultural settings, as there is some evidence that managers from different cultural backgrounds might respond differently to factors that promote entrepreneurial behaviors (de Jong et al., 2015; Hornsby et al., 1999). This also holds for psychological ownership, which might differ depending on middle managers' cultural context (Pierce et al., 2003, Sieger et. 2013). As the hierarchical level of responding managers might influence pro-organizational behaviors, such as entrepreneurial behavior, we encourage other scholars to test the suggested relationships at different managerial levels (Hornsby et al., 2009). At last, the omission of variables could also pose a threat to our study. In our study, we focus on the entrepreneurial behavior of middle managers because of their involvement in strategy development and feelings of ownership. However, middle managers' entrepreneurial behavior could also be affected by other independent or moderating variables that have not been considered, such as the CEO's leadership style. Hence, influencing or stimulating certain behavior "of subordinates is an integral element of leading employees" (Schaefer und Guenther, 2016, p. 238). There is some evidence that leadership styles of empowerment and participation resonate with creative and innovative work behaviors, such as entrepreneurial behavior (Lee et al., 2017; Lam et al., 2015) and self-efficacy, which is seen as root of psychological ownership (Aggarwal et al., 2020). To create a more comprehensive view, future research could consider these leadership styles as moderators in the relationship between involvement in strategy development, psychological ownership and entrepreneurial behavior. In this paper, we have focused on organization-based psychological ownership. This opens the opportunity for further research examining the effect of job-based psychological ownership on middle managers' entrepreneurial behavior. Furthermore, as psychological ownership can be experienced as an individual or collective phenomenon (Henssen and Koiranen, 2021; Henssen et al., 2014), while we examined it on individual level, it could be worthwhile to examine if the identified effects on entrepreneurial behavior also unfold for collective psychological ownership. Such an approach would require an extension of the research focus away from a single manager involved in strategy development to the top management team, their members' roles and dynamics. Additionally, addressing multiple respondents by a dyadic of even triadic survey could provide an even deeper understanding of the development of psychological ownership and entrepreneurial behavior.

References Section C

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D. Psychological Ownership and Stewardship Behavior: The Moderating Role of Agency Culture

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We, the authors of the paper, hereby declare that this paper's first author, Sina K. Feldermann, was responsible for collecting and analyzing most of the data, developing the multiple regression models, and writing most of the paper.

Sina K. Feldermann	Martin R.W. Hiebl

D.1 Introduction

Large parts of the literature on agency theory and stewardship theory address the relationship between the contractual owners of a business and its employees, analyzing the conditions under which employees act either in a self-serving way or in the best interests of the company and its owners (Davis et al., 1997; Donaldson and Davis, 1991; Eisenhardt, 1989; Jensen and Meckling, 1976). Where agency theorists assume managers to be individualistic utility maximizers, stewardship theorists assume managers to be “collective self-actualizers who achieve utility through organizational achievement” (Davis et al., 1997, p. 38).

Researchers are increasingly examining the “emerging construct” (Dawkins et al., 2017, p. 163) of psychological ownership, which seems to fit well with the agency and stewardship debates. The construct explains why and how non-owning employees could think, feel and act as though they were the owners of the company. Making employees the psychological owners of a firm is a challenging task for many organizations (Sieger et al., 2013). However, doing so can be a rewarding journey, not least due to the conventional wisdom that nobody cares about something as much as its owner (Bernhard, 2011).

Pierce et al. (2001, p. 299) define psychological ownership as a “state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is ‘theirs’”. A feeling of ownership could turn agents into psychological principals (Sieger et al., 2013) or promote employees to act in the best interests of the firm (Hernandez, 2012; Henssen et al., 2014). These and other pro-organizational attitudes, behaviors and individual-level outcomes determined by psychological ownership (for overviews, see Dawkins et al., 2017; Zhang et al., 2021) make it desirable for companies to strive for their employees to feel as though as they own the firm. For this reason, Pierce and Furo (1990) argue that employee ownership can become a powerful phenomenon when it goes far beyond formal/legal ownership rights. Olckers et al. (2017, p. v) even state that a company’s pursuit of performance “has no greater ally than an employee who feels ownership”.

Accordingly, prior research has found that psychological ownership is linked to a variety of desirable attitudes and behaviors of employees (Dawkins et al., 2017), such as entrepreneurial behavior (Sieger et al., 2013), stewardship behavior (Henssen and Koiranen, 2021; Henssen et al., 2014,), and other extra-role behaviors (Dawkins et al., 2017). In this study, we focus on stewardship behavior since stewards are known to be pro-organizational and trustworthy managers or employees who focus more on the long-term wellbeing and wealth of their employer organization than on their own interests (Bormann et al., 2021; Davis et al., 1997;

Davis et al., 2010; Henssen and Koiranen, 2021; Henssen et al., 2014). Thus, for principals who actually hold ownership in a firm, it seems to be attractive to support employees to engage in stewardship behavior. One way to promote stewardship behavior is to provide formal ownership to employees (Miller and Le Breton-Miller, 2006; Wasserman, 2006). While granting shares or stock options to employees is a common form of incentive in public organizations (Zellweger, 2017), most firms worldwide are privately held (La Porta et al., 1999). These privately held firms are often small in size and feature concentrated ownership by one or several controlling families (Ang et al., 2000; La Porta et al., 1999; Lorenzo et al., 2022). In particular, in such firms, principals might hesitate to provide ownership shares to employees, as it would dilute their control over the firm or might be too costly, which is why most privately held firms refrain from offering formal ownership shares to their executives and employees (Zellweger, 2017). However, employees who experience high degrees of psychological ownership might nevertheless develop stewardship behavior (Henssen et al., 2014; Hernandez, 2012). Hence, especially, but not exclusively for the large group of privately held firms worldwide, potential ways to create stewardship behavior without granting employees formal ownership are highly relevant and sought after (Basco and Voordeckers, 2015).

At the same time, the boundary conditions under which psychological ownership influences behavioral outcomes such as stewardship behavior are an ongoing debate (Dawkins et al., 2017). As detailed in our below review of the relevant literature, relatively little attention has been paid to the factors that may moderate the relationship between psychological ownership and its outcomes. Among the few studies investigating such moderation effects, the study by Henssen et al. (2014) is particularly relevant to our research. Henssen et al. (2014) focus on the relationship between psychological ownership and stewardship behavior and provide evidence that differences in experiencing psychological ownership (individual- vs. collective-oriented) might affect its impact on stewardship behavior. We can thus infer that psychological ownership might not always translate into employees developing stewardship behavior. Davis et al. (2010, p. 1095) similarly argue that a pronounced agency culture, which is reflected by "an environment of control and self-serving behavior", is "negatively related to stewardship […] and that perceived agency will be negatively associated with stewardship". Based on a survey of US family firms, Davis et al. (2010) find some confirmation for this negative relationship between an agency culture and stewardship behavior. Likewise, Hernandez (2012) argues that stewardship behavior is more likely to evolve when no governance mechanisms (explicit or implicit) rooted in an agency culture are implemented. At the same time, prior research indicates that agency and stewardship cultures can coexist in firms (cf. Madison et al., 2017, 2016).

Taking all these results on board, we can expect that employees who show psychological ownership are less likely to develop stewardship behavior if they perceive to be surrounded by an agency culture in their firm. We specifically focus on the "perception" of an agency culture here, as past research suggests that the existence of an agency culture can hardly be objectified and literally lies in the eye of the beholder (Davis et al., 2010; Kulik, 2005). To summarize, we address the following central research question in this paper:

How does the perception of an agency culture affect the translation of employees' psychological ownership into stewardship behavior?

To address this question, we combine prior research on psychological ownership and stewardship theory with agency theory. We test our predictions using a survey of the financial managers of 129 firms in Germany. Our study contributes to the literature in the following ways. First, we address the call by Dawkins et al. (2017) for more analyses of the relationship between psychological ownership and its outcomes as well as the conditions under which psychological ownership has stronger or weaker effects on these outcomes. In particular, we expand the focus of psychological ownership research by analyzing an organization's agency culture as a boundary condition for the more or less pronounced unfolding of individual-level stewardship behavior. Second, we extend the findings presented by Sieger et al. (2013) and show that irrespective of explicit monitoring mechanisms, employees can perceive an implicit agency culture, which may affect their pro-organizational behavior. Third, by examining the effect of psychological ownership on stewardship behavior under the moderating effect of a perceived agency culture (Kulik, 2005), we address the call by Chrisman et al. (2007) for more work examining the coexistence of aspects of stewardship theory and agency theory in firms. Additionally, we provide a more nuanced understanding of the antecedents of stewardship. This was called for by Davis et al. (1997, p. 21), who state that researchers have "failed to examine the psychological and situational underpinnings of stewardship theory". To this strand of the literature, we add a combined examination of the effect of individuals' psychological ownership and perceived agency culture on stewardship behavior.

The remainder of this paper is structured as follows. In the next section, we briefly recap the foundations of psychological ownership, agency theory and stewardship theory. Afterward, we develop two hypotheses and outline our methodology to test those hypotheses. We then present our results and discuss these in light of the prior literature and theory. We conclude the paper with its most important implications, limitations and future research avenues.

D.2 Theoretical Foundations

D.2.1 Psychological Ownership

Following the above definition by Pierce et al. (2003), the essence of psychological ownership is an individual's strong psychological connection to an object that results in a feeling of possessiveness toward it (Davis et al., 1997; Henssen et al., 2014; Pierce et al., 2003, 2001). Individuals can experience a feeling of ownership by (1) controlling the target of ownership, (2) gaining and learning intimate knowledge about the target of ownership and (3) investing one's energy and effort into the target of ownership. These three ways are the so-called "routes" of psychological ownership (Pierce et al., 2001).

In an organizational context, psychological ownership could be seen as a way in which "employees relate to, or feel psychologically 'attached' to, their organization" (Dawkins et al., 2017, p. 163) or as a bond that employees "build to the organization for which they work" (Bernhard, 2011, p. 1). When psychological ownership emerges, employees feel as though they are the owners of the company and that the business is "theirs" (Pierce et al., 2001; Wagner et al., 2003; for an overview, see Dawkins et al., 2017). Following Wagner et al. (2003) and O'Driscoll et al. (2006), experiencing psychological ownership could be seen as an important aspect in shaping the relationship between an employee and his/her organization. Prior research indicates that companies can foster and enhance the development of psychological ownership by applying different management practices (O'Driscoll et al., 2006; Wagner et al., 2003) referring to the three routes mentioned above or through an organizational culture that reinforces stewardship (Davis et al., 2010; Bormann et al., 2021; Neubaum et al., 2017). If employees develop psychological ownership toward their organization, this psychological connection can result in positive work-related attitudes and behavior (Ramos et al., 2014; Zhang et al., 2021). Thus, triggering and enhancing the development of their employees' psychological ownership might be worthwhile for companies for different reasons. A variety of studies find numerous pro-organizational outcomes including behavioral, emotional and psychological consequences (see below; cf. Bernhard and O'Driscoll, 2011; Mayhew et al., 2007; Pierce et al., 2003, 2001; Van Dyne and Pierce, 2004).

Following Dawkins et al. (2017), prior research on the outcomes of psychological ownership classifies these consequences into individual attitudes, individual behaviors and other outcomes. With regard to individual pro-organizational attitudes, numerous studies have highlighted the effects of psychological ownership on the development of employees' affective commitment (cf. Bernhard and O'Driscoll, 2011; Liu et al., 2012; Mayhew et al., 2007; Peng and Pierce, 2015; Van Dyne and Pierce, 2004), job satisfaction (cf. Avey et al., 2012, 2009; Bernhard and O'Driscoll, 2011; van Dyne and Pierce, 2004), organization-based self-esteem (Liu et al., 2012; Mayhew et al., 2007; van Dyne and Pierce, 2004) and work engagement (cf. Ramos et al., 2014). Further empirical work has addressed the relationship between psychological ownership and an individual's behavior. For instance, the study by Henssen et al. (2014) shows stewardship behavior to be an outcome of autonomy, mediated by psychological ownership. Organizational citizenship behavior and organizational commitment are examined as outcomes of psychological ownership by Bernhard and O'Driscoll (2011), O'Driscoll et al. (2006), Peng and Pierce (2015), and van Dyne and Pierce (2004). Additionally, the positive relationship between psychological ownership and extra-role and in-role behavior is addressed, for instance, by Ramos et al. (2014) and van Dyne and Pierce (2004). Other studies show that these behavioral consequences improve performance outcomes at the individual and firm levels (Sieger et al., 2013; Wagner et al., 2003). Further, a small strand of the literature deals with other outcomes of psychological ownership such as reduced turnover intensions (Peng and Pierce, 2015), knowledge sharing (Han et al., 2010) and burnout experiences (Kaur et al., 2013).

These examples underpin the general observation made by Zhang et al. (2021), Dawkins et al. (2017) and Brown et al. (2014) that research focusing on the outcomes of psychological ownership has expanded in recent years, especially on the linkages between psychological ownership and employees' attitudes and behaviors. However, little is known about the mechanisms underlying the link between psychological ownership and its outcomes or the circumstances that promote or prevent the unfolding of these outcomes. This is also bemoaned by Dawkins et al. (2017). Although a significant body of the literature on the outcomes of psychological ownership exists, a surprisingly low number of studies have focused on the factors that may moderate the relationship between psychological ownership and various workplace outcomes. Only a few have empirically examined the boundary conditions as well as the environmental and organizational factors affecting the relationship between psychological ownership and its potential outcomes. Studies that have included moderating factors in their analyses, however, indicate that such factors may decisively influence how psychological ownership unfolds its influence on individual-level behavior. For example, in an experiment with 104 participants, Hsu (2013, p. 387) finds that psychological ownership is positively related to entrepreneurs' intention to reenter their business after they had quit it and that this relationship is strengthened "by the entrepreneur's prevention focus orientation". In their field study, Brown et al. (2014) highlight that a high trust environment affects the relationship between psychological ownership and territorial behavior. In a family firm context, Ramos et al. (2014) show that the relationship between psychological ownership and different work engagement dimensions is affected by the employee's status as a family or non-family member.

To summarize, previous research findings show that psychological ownership may result in many beneficial individual-level outcomes, but little is so far known about the conditions under which these effects materialize. Our study addresses this gap in the literature by examining the effect of an agency culture on the psychological ownership-stewardship behavior relationship.

D.2.2 Agency Theory and Stewardship Theory

Agency theory is an important and generally accepted framework in organizational research (cf. Caers et al. 2006; Donaldson and Davis, 1991; Eisenhardt, 1989). Jensen and Meckling (1976, p. 308) define an agency relationship as a "contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (see also Lundesgaard, 2001). The behavioral assumptions underlying agency theory are based on the model of homo economicus (Doucouliagos, 1994) and they consider individuals to be self-serving, self-interested and opportunistic as well as rationally bounded and risk averse (Eisenhardt, 1989; Noreen, 1988). Consequently, agency theory suggests that individuals act to maximize their own utility with a minimum of effort and even accept costs for other parties (Jensen and Meckling, 1976).

The relationship between a manager of a firm (agent) and the owners of the firm (principals) could be classified as an agency relationship (Eisenhardt, 1989; Fama and Jensen, 1983), as owners become principals when they contract with executives who manage their firm on their behalf (Davis et al., 1997). However, as outlined by Schuster (1990, p. 251), "there are some problems inherent in this relationship". For example, this relationship and contract is often characterized by the separation of ownership and control (Fama and Jensen, 1983; Höner and Mohe, 2009; Schuster, 1990; Shleifer and Vishny, 1997). This separation is theorized to result in a divergence and conflict of interests between owners and managers (Caers et al., 2006; Fox and Hamilton, 1994; Wasserman, 2006) due to their self-serving motivations and behaviors as well as asymmetries in the information available to the owner and manager (Noreen, 1988). The owners (i.e., principals) are regularly depicted as acting in the long-term interests of their business, while the managers (i.e., agents) are depicted as acting to maximize their individual utility (Höner and Mohe, 2009). These differing interests, goals and motivations of the principal and agent as well as the principal's inability to assess whether the agent acts appropriately in the principal's interest are known as agency problems (Eisenhardt, 1989; Lundesgaard, 2001). Agency theory considers agents to take actions that focus on maximizing neither the return for the principal nor the firm's long-term well-being (Donaldson and Davis, 1991; Jensen and Meckling, 1976; Madison et al., 2017). Such opportunistic managerial behaviors can cost owners "far more than the personal benefit to the managers" (Shleifer and Vishny, 1997, p. 744) and result in agency losses and agency costs (Jensen and Meckling, 1976). To manage and control agents' self-serving behavior, different – and, potentially, costly – mechanisms can help align the principal's and the manager's interests, including incentive compensation systems, formal control systems and auditing and budget restrictions (Jensen and Meckling, 1976; Quinn et al., 2018).[4]

However, the conflicts of interests between principal and agent and individual utility motivations underlying agency theory have been found to not hold for all managers (Davis et al., 1997). For this reason, Doucouliagos (1994) calls for additional theory focusing on relationships based on non-economic assumptions. Similarly, Eisenhardt (1989) argues that researchers could combine agency theory with complementary theories. In line with these calls, Donaldson and Davis (1991) and Davis et al. (1997) introduce stewardship theory, which is seen as an alternative approach to agency theory in corporate governance (cf. Chrisman, 2019). The situational and psychological factors underlying stewardship theory differ from those of agency theory (Davis et al., 1997; Domínguez-Escrig et al., 2019; Hernandez, 2012; Wasserman, 2006). The latter, which is rooted in rationality, assumes managers to be self-serving individuals, rationally seeking to maximize their individual utility (Corbetta and Salvato, 2004; Davis et al., 1997). By contrast, stewardship theory is based on the assumption that pro-organizational and collectivistic behavior has higher utility for managers than self-serving and individualistic behavior (Corbetta and Salvato, 2004; Davis et al., 1997; Henssen et al., 2014; Vallejo, 2009). Stewardship-oriented managers tend to protect the long-term welfare of others such as the principals and the firm (Hernandez, 2012, 2008; Vallejo, 2009). For such managers, it is essential "to do a good job [and] to be a good steward of the corporate

[4] We acknowledge that other alternatives might exist to address the complexity arising from traditional agency relationships, such as value exchange (cf. Navarro-Meneses, 2016).

assets” (Donaldson and Davis, 1991, p. 51). Consequently, stewardship theory refers to the relationships and situations in which managers act in the best interests of the principal and the firm (Davis et al., 2007; Vallejo, 2009). By trying to maximize organizational performance and serving the needs of the firm and the principals, stewardship-oriented managers derive utility and meet their personal needs (Caers et al., 2006; Fox and Hamilton, 1994). Hence, the motives and interests of managers (agents) and owners (principals) are more aligned than in the agency-theoretic paradigm (Davis et al., 1997). This possible alignment of interests between principals and agents seems to reflect some kind of “psychological contract” included in the stewardship relationship. Here, agents become “trustworthy agents” (Davis et al., 2007, pp. 40–41), or stewards. For this reason, Wasserman (2006, p. 962) argues that “[s]tewards are executives employed by principals whose interests tend to be aligned with those of the principals. Stewards are organizationally centered executives […] who identify closely with their organizations and thus derive higher satisfaction from behaviors that promote the organization’ interests than from self-serving behavior”. The alignment of interests in stewardship relationships does not necessitate mechanisms to manage and control the self-serving interests and behaviors of an agent, which, in the worst case, could even be counterproductive (Chrisman, 2019; Hernandez, 2012; Quinn et al., 2018; Wasserman, 2006). In contrast to agency theory, which is characterized by agents’ counterproductive behavior in terms of firms’ well-being, productive work behavior such as stewardship behavior is theorized to allow the organization to function more effectively and generally better (Madison et al., 2017).

D.3 Hypotheses Development

D.3.1 Relationship between Psychological Ownership and Stewardship Behavior

In their work on psychological ownership, Pierce et al. (2003) explain that psychological ownership supports the feeling of responsibility associated with nurturing, caring and protecting as well as the willingness to take risks and make personal sacrifices in favor of the ownership target. Following Avey et al. (2012, p. 24), a feeling of ownership could “produce felt responsibility to the target (to nurture, provide for, protect) and a sense of rights to have control over what happens to the target”. Because of such a strong psychological attachment, the ownership target (company) becomes part of an employee’s extended self (van Dyne and Pierce, 2004), which might make him/her go the extra mile for the organization for which he/she works (Ramos et al., 2014). Feeling responsible for an object in this manner (i.e., taking care of and protecting it) is also related to stewardship behavior (Henssen et al., 2014; Hernandez, 2012), which is characterized by individuals acting in the best interests of other parties such as the principal (Davis et al., 1997) and company (Wagner et al., 2003). For this reason, Hernandez (2012, p. 182) argues that the “structural factors, cognitive mechanisms and affective mechanisms” leading to stewardship behavior might correlate with the determinants of psychological ownership. Consequently, Pierce et al. (2003), Wasserman (2006), Hernandez (2012), and Peck et al. (2021) suggest psychological ownership to be an essential determinant in the emergence of stewardship behavior. If people experience psychological ownership toward an organization, a corresponding pro-organizational behavior can be expected (Henssen et al., 2014; Hernandez, 2012; O’Driscoll et al., 2006). Especially with regard to employees and the companies for which they work, Wagner et al. (2003) argue that ownership feelings and beliefs are positively related to ownership behaviors as well as employees’ attitudes toward their company. Hence, employees who might feel a strong sense of psychological ownership toward an object are more likely to behave as stewards (Peck et al., 2021; Wasserman, 2006). For this reason, we propose that an employee experiencing psychological ownership is likely to exhibit stewardship behavior:

Hypothesis 1. The psychological ownership of employees toward their firm results in their stewardship behavior toward the firm.

D.3.2 The Moderating Effect of a Perceived Agency Culture

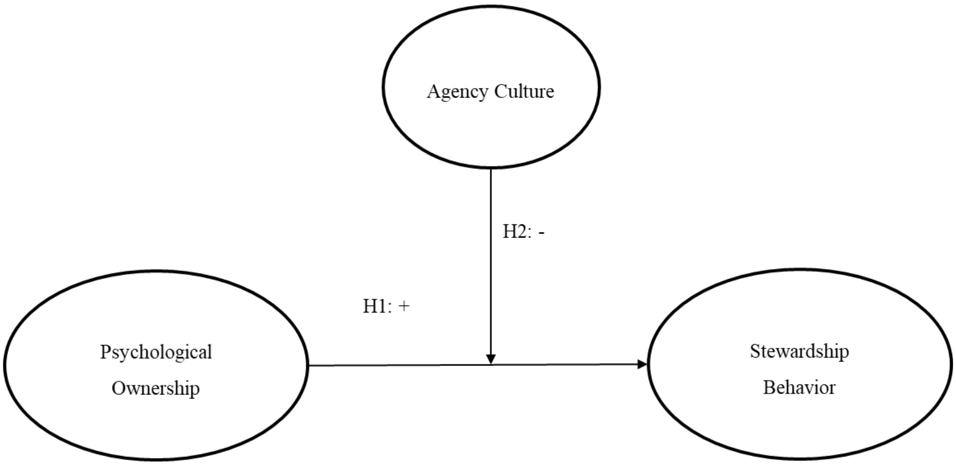
As outlined by Davis et al. (1997), stewardship theory is based on individuals’ psychological attributes and organizations’ situational characteristics. Hypothesis 1 theorized stewardship behavior as an outcome of psychological ownership, thus referring to the aforementioned psychological attributes of individuals. In addition to these psychological attributes, organizations’ situational characteristics such as an agency culture and its organizational leaders’ behavior might affect the development of stewardship behavior (Davis et al., 2010). By creating a managerial system based on stewardship principles such as the trust, authority and discretion given to managers (Donaldson and Davis, 1991; Henssen et al., 2014), managers’ psychological variables and firms’ situational variables could align (Davis et al., 2007). However, there remain situations in which such an alignment of individual psychological factors and a firm’s situational variables might not be possible. That is, the notions of stewardship behavior and agency culture may coexist in a firm. This phenomenon has been addressed by, for instance, Chrisman et al. (2007), Caers et al. (2006) and Corbetta and Salvato (2004).

According to Davis et al.'s (2007, p. 40) principal/manager choice model, "misaligning corporate governance structure with executive orientation could result in severe losses to the firm". Hernandez (2012) even suggests that mechanisms to manage and control the self-serving interests and behaviors of an agent could be counterproductive to managers behaving in line with the stewardship paradigm. Consequently, "any form of direct or indirect control may lower stewards' motivation, negatively affecting their pro-organizational behavior both in the short and in the long term" (Corbetta and Salvato, 2004, p. 360). For instance, if a manager who has a strong feeling of psychological ownership toward his/her firm is confronted with agency control mechanisms such as intense monitoring, his/her resulting stewardship behavior may suffer and be hindered. However, even if explicit agency control mechanisms are not prevalent, employees' implicit perception of an organization's agency culture might hinder their engagement in stewardship behavior as well (Davis et al., 2010). We therefore assume that the relationship between psychological ownership and stewardship behavior is moderated by a prevailing agency culture. Besides agency control mechanisms, such agency culture is characterized by an emphasis of the other organizational members on self-interest and thus a neglect of the well-being of the firm (Kulik, 2009). Our assumption on the moderating role of an agency culture receives further support from research indicating that the outcomes of an employee's sense of ownership toward an organization are affected by such factors as the organizational culture, organizational climate and senior managers' attitudes (Mayhew et al., 2007; Ramos et al., 2014). Thus:

Hypothesis 2. The positive relationship between an employee's psychological ownership and his/her stewardship behavior is less pronounced if the employee perceives a high level of agency culture in the firm.

Figure D-1 summarizes our theoretical model.

Figure D-1. Theoretical model



D.4 Methods

D.4.1 Sample and Data Collection

We test the above predictions based on survey data from 129 German firms. The survey focused on non-listed companies with a minimum of 10 employees, as central agency theory assumptions and determinants might not hold for very small companies (Daltonet al., 2007; Bendickson et al., 2016). In addition, past research has found that very small or micro enterprises rarely employ professional managers or the governance mechanisms to control them (Bendickson et al., 2016; Lavia Lopez and Hiebl, 2015). Hence, an agency culture might hardly be present or typical measures of agency culture, like the one we used, might not work for very small firms. In addition, financial services companies and listed firms were excluded, as financial participation in the form of employee stock ownership is more common in the financial services industry and for listed firms (Kuvaas, 2003), which might affect our variables of interest. Furthermore, agency control mechanisms usually feature an idiosyncratic design in the financial services industry as opposed to those typically applied in other industries (Messner, 2016; Gooneratne and Hoque, 2013). Thus, a universal measure of perceived agency culture for all industries might be unsuitable, which represents a further reason for excluding financial services firms from our survey.

Like Van Dyne and Pierce (2004) in the first of their three field studies of psychological ownership, we addressed respondents from the top hierarchical level. That is, we addressed the highest ranked financial managers in these companies. Depending on firm size and legal form, this was either the Chief Financial Officer (CFO) or the head of the accounting or controlling department. Such financial managers play a crucial role in strategic decision making (Menz,

2012) and can therefore be seen as key informants (cf. Sieger et al., 2013), while usually not holding ownership shares themselves (Hiebl, 2015).

We purchased company address data from one of the largest professional address and financial data suppliers in Germany using the abovementioned selection criteria. The data collection took place between March 2018 and July 2019 in two waves. In both waves, the respondents returned the questionnaire to us in written form. During the first round of data collection and following recent recommendations on conducting surveys (e.g., Chidlow et al., 2015; Dillman et al., 2014; Hiebl and Richter, 2018; Pielsticker and Hiebl, 2020), we first tried to establish a pre-contact with managers by telephone and explained the aim of our study. To those managers who agreed to participate, we then sent our structured questionnaire via email. Respondents could fill out the questionnaire in PDF format and return it to us via email. For those firms in which we could not reach the respective managers via phone, we sent out email invitations to their general email addresses (e.g., office@firm.de) and respondents could return their answers via the online questionnaire. In total, the first round of data collection resulted in 167 responses.

To increase the number of responses, we initiated a second round of data collection. We hired a professional market research agency, who again implemented an online questionnaire where participants could fill out the same questionnaire as in the first wave using their web browser. In this second wave, we approached additional firms not approached during the first wave. In the second wave, we received 66 additional responses. In total, we thus received 233 complete or partially complete questionnaires, of which – due to missing data – 129 were used for our analyses. Of these 129 questionnaires, 102 were gathered in the first wave and 27 in the second wave. To rule out the possibility that the wave of data collection materially impacted our results, we included a dummy variable on the data collection round as a control variable in our regression analysis.

Due to using general email addresses (e.g., office@firm.de), we could not ascertain how many of our intended financial manager respondents actually received our invitation to participate in the survey. For this reason, we cannot calculate a reliable response rate for our study. However, following recent research on survey theory (e.g., Hiebl and Richter, 2018; Speklé and Widener, 2018), response rates do not seem to be of paramount relevance for studies such as ours. That is, unlike studies aiming for statistical generalizability, studies intending to test theoretical relationships do not require a representative and random sample (Speklé and Widener, 2018). For the latter, "it is only necessary that the sample is relevant to the group of subjects the theory is supposed to apply to, i.e., the targeted population" (Speklé and Widener, 2018, p. 4).

Consequently, as response rates are more important to studies aiming for statistical generalizations (Hiebl and Richter, 2018; Speklé and Widener, 2018), the non-availability of a response rate in the present study seems negligible.

To check whether our sample is representative of the firms we addressed in our survey (Speklé and Widener, 2018), we tested for potential non-response bias. Van der Stede et al. (2005) point out that non-responses could depend on respondents' characteristics such as sex, age and education as well as organizational characteristics such as ownership, size and diversification. Because we could identify non-responding organizations, we could compare the characteristics of responding and non-responding firms. In particular, and in line with Bedford et al. (2016) and Wasserman (2006), we compared the firm size and industry affiliations of responding and non-responding organizations. First, we performed a Kolmogorov-Smirnov test, which indicated that our data are not normally distributed. Due to the different measurements (industry is measured as a dummy variable, whereas firm size as the total number of employees), we performed a Mann-Whitney U test for the number of employees and a chi-square test for the industry. Our corresponding results show no significant differences between respondents and non-respondents. Therefore, we found no evidence that non-response bias affected the validity of our results.

A further potential problem related to our underlying survey design might be common method bias. Following Podsakoff et al. (2003), we addressed the potential for common method bias ex ante when designing the survey and ex post using statistical controls. We attempted to mitigate this bias ex ante by, first, separating the measurement of the dependent and independent variables in our questionnaire and, second, protecting the anonymity of our respondents. To check for common method bias ex post, we conducted Harman's single factor test (cf. Harman, 1976; Podsakoff and Organ, 1986), which investigates whether a single factor explains the majority of the variance. Our exploratory factor analysis with all the variables included (Podsakoff et al., 2003; Sieger et al., 2013) results in a three-factor solution that explains 59.23 per cent of the variance. Therefore, 30.74 per cent of the variance is explained by the first factor, providing some evidence that common method bias is not a major problem in our study (cf. Podsakoff et al., 2003).

D.4.2 Measures

We relied on previously tested and validated measures for our key constructs. All of these were originally developed in English and had to be translated into German to conduct the survey.

Where possible, we relied on previously translated survey items that had already been used in prior research relying on German-language questionnaires, such as for the construct of psychological ownership used by Sieger et al. (2013). Where this was not possible, we translated the original constructs into German ourselves. Afterward, an independent language expert who did not know the original scale items re-translated the items from German into English (cf. Brislin, 1970). The comparison of the original English version and re-translated English version revealed no major differences potentially affecting the validity of our measurements. The questionnaire was also reviewed by a group of experienced business researchers as well as pilot tested on a sample of eight financial managers and management accountants. Their feedback and that of the experienced researchers was incorporated into our final questionnaire.

D.4.2.1 Dependent Variable

Stewardship behavior. Three items from Davis et al. (2010) were used to measure stewardship behavior. These items included questions on the long- or short-term approach in business taken by the organizational leaders of the respective firms. However, we modified the original items to match this study's interest in the behavior of the addressed financial managers rather than that of the organizational leaders. For instance, we modified the original item "The leaders of my organization take a long-term more than a short-term approach to business" to "I take a long-term more than a short-term approach to business".[5] The seven-point Likert scale items ranged from "1 = strongly disagree" to "7 = strongly agree". The construct's Cronbach's alpha was 0.619 and the factor loadings for stewardship behavior displayed acceptable reliability (see Appendix Section D Table A1 for the details). Following Hair et al. (2014), Cronbach's alpha values which range between 0.6 and 0.7 are just acceptable at the lower bound. In addition, Field (2013, with reference to Kline, 1999) argues that for psychological concepts, values below 0.7 might be expected and accepted due to the complex nature of those constructs. As the alignment of interests as a central aspect of a stewardship relationship could be classified as a psychological contract (Davis et al., 2007), stewardship behavior fits into this category. Still, a Cronbach's alpha value of 0.619 might be somewhat critical (cf. Peterson,

[5] We acknowledge that further scales are available for measuring stewardship (e.g., Barbuto and Wheeler, 2006; Groesbeck 2001; Neubaum et al. 2017). For example, the study by Barbuto and Wheeler (2006) measures stewardship behavior as a subdimension of servant leadership, whereas the study by Groesbeck (2001) measures group stewardship at the work group level. For our research objectives, however, the measurements suggested by Davis et al. (2010) appeared more readily applicable since we could derive measures for both organizational agency culture and individual stewardship behavior from their paper. In addition, the measurements by Davis et al. (2010) have been frequently applied in related research settings (e.g., Henssen and Koiranen 2021; Henssen et al. 2014).

1994). Thus, we calculated additional measures to guarantee the reliability of our measurement scales. We followed the Fornell–Larcker criterion for convergent validity and calculated the average variance extracted (AVE) and composite reliability (CR) for our measurement scales (cf. Fornell and Larcker, 1981). The stewardship behavior scale's AVE is 0.555 and CR is 0.788. As suggested by Hair et al. (2014, p. 619; see also Fornell and Larcker, 1981), an "AVE of .5 or higher is a good rule of thumb suggesting adequate convergence". For CR, Hair et al. (2014, p. 619) indicate that a value of ".7 or higher suggests good reliability". Since our AVE and CR values are above these commonly used thresholds, we are confident that convergent validity for our stewardship behavior measurement is acceptable. Relying on AVE and CR seems to be appropriate for the stewardship behavior measurement anyway, as for Cronbach's alpha, "increasing the number of items, even with the same degree of intercorrelation, will increase the reliability value" (Hair et al., 2014, p. 123). In other words, the calculation of Cronbach's alpha is highly sensitive to the number of items included in the scale, resulting in lower (higher) values for the use of fewer (more) items in the scale. As we rely on a three-item scale to measure stewardship behavior, lower Cronbach's alpha values could be expected. This notion reinforces the use of additional measures to ensure the reliability of the measurements, such as CR and AVE.

D.4.2.2 Independent Variable

Psychological ownership. To measure psychological ownership, we relied on the seven-item instrument originally developed by Pierce et al. (2004), which includes sample items such as "This is MY organization" and "I sense that this is MY company". This instrument is commonly used in empirical studies and has been validated by various studies focusing on psychological ownership (cf. Henssen et al., 2014; Liu et al., 2012; O'Driscoll et al., 2006; Sieger et al., 2013). Again, the seven-point Likert scale items ranged from "1 = strongly disagree" to "7 = strongly agree". The Cronbach's alpha of this construct was 0.901 and the factor loadings for psychological ownership displayed satisfactory reliability (see Appendix Section D Table D-4). Furthermore, with a CR of 0.919 and AVE of 0.620, convergent and discriminant validity are satisfactory.

Agency culture. Three items from Davis et al. (2010) were used to measure the perceived existence of an agency culture. The sample items assessed the perceptions of the self-serving and self-interested motivation of organizational leaders and included items such as "My organizational leaders use their power and authority to serve their own interests". Again, for this construct, the seven-point Likert scale items ranged from "1 = strongly disagree" to "7 =

strongly agree". The construct's Cronbach's alpha was 0.895 and the factor loadings for an agency culture displayed satisfactory reliability (see Appendix Section D Table D-4). In addition, the CR (0.934) and AVE (0.826) values display a satisfactory level of convergent validity for the agency culture measurement scale (Hair et al., 2014).

D.4.2.3 Control Variables

We included several control variables to account for the potential impact of further factors on our dependent variable (i.e., stewardship behavior). In line with the prior literature, we controlled for firm size and the status of the firm as a family firm as well as for the respondent's age, sex and tenure. Furthermore, we controlled for whether the respondent holds contractual ownership shares.

Firm size. In large firms, employees might have insufficient direct contact with organizational leaders (Davis et al., 2010), meaning that the size of an organization might influence employees' perception of business leaders' self-serving behavior (perceived agency culture). Furthermore, as outlined by Madison et al. (2017), firm size could also affect agency and stewardship governance in organizations, as larger firms seem to be more complex. This in turn might require more formalized and professionalized (control) mechanisms such as a board of directors (Madison et al., 2017), as agency behavior might occur in such environments more frequently (Wasserman, 2006). Thus, we controlled for firm size, measured by the number of employees.

Family firm. Davis et al. (1997) argue that under certain circumstances, managers might behave more like stewards than agents. In line with this notion, prior research indicates that stewardship theory best fits and is often found in family firms (Bormann et al., 2021; Calabrò et al. 2019; Chrisman, 2019; Davis et al., 2010; Henssen et al., 2014). Consequently, we controlled for the family firm status of our sampled firms. To measure such a status, family business research has not yet developed a generally agreed-upon approach (Chua et al., 1999; Steiger et al., 2015). A widely used approach, however, is the self-classification of firms by survey respondents (Steiger et al., 2015). We relied on this approach and asked respondents for their assessment of whether they consider their company to be a family business (coded 1) or not (coded 0).

Age. We further controlled for respondents' age because there is evidence that older managers might be a driving factor in shaping stewardship behavior. For instance, Hiebl (2015, p. 18) finds that "CFO maturity in terms of age also emerged […] as a factor that enabled [the CFOs] to act in a steward-like manner because they had achieved the pinnacle of career success and no longer had strong personal ambition”. We measured the age of respondents in years at the time when they filled out our questionnaire.

Sex. The study by Lewis and Fagenson-Eland (1998) shows that sex influences employees’ perception of organizational leaders’ behavior. This might also be true for the perception of their own behavior. Because the majority of our respondents are male, bias might influence their judgment of their potential stewardship behavior and perception of organizational leaders’ self-serving behavior (i.e., perceived agency culture). Therefore, we controlled for sex using a dummy variable coded 0 for female respondents and 1 for male respondents.

Tenure. The duration of a respondent’s corporate affiliation might influence his/her perceptions and understanding of the organization as well as its setting and members (Davis et al., 2010; Hater and Bass, 1988). We therefore controlled for the respondent’s tenure, measured as the number of years for which he/she had worked for the firm.

Ownership shares. As argued by Miller and Le Breton-Miller (2006), making managers co-owners of the company by granting them ownership shares could function as an incentive that promotes stewardship behavior. Similarly, Wasserman (2006, p. 963) outlines that “[e]xecutives’ ‘psychological ownership’ of an organization […] can be strongly influenced by their equity ownership”. Thus, employee stock ownership could create some sense of shared goals (Kuvaas, 2003) between owners and managers, which is key characteristic of a stewardship relationship. As we are interested in respondent’ stewardship behavior as a result of the feeling of ownership in the absence of legal ownership, we controlled for whether they hold ownership shares of the company. To measure ownership shares, we asked respondents to indicate the extent of their ownership shares in relation to their compensation (cf. Indjejikian et al., 2014). We created a dummy variable coded 1 if the respondent holds ownership shares and 0 otherwise.

Data collection. Since we collected the data in two waves (see above), which might have affected our results, we controlled for the round of data collection. Thus, we created a dummy variable coded 1 for the second round of data collection and 0 for the first round of data collection.

D.5 Results

D.5.1 Descriptive Statistics

On average, the companies in our sample employed 268 employees and 54 per cent of the sampled firms could be classified as family firms. Of the participating companies, 23 per cent were manufacturing firms and 14 per cent belonged to the retail sector. The remaining 63 per cent of firms were part of the service sector such as facilities management providers and utilities (electricity, gas, water). Seventy-five per cent of the participating highest ranked financial managers were men and, on average, the respondents were 47.18 years old and had worked for their companies for 12.31 years at the time of answering our questionnaire. Table D-1 displays further descriptive statistics on the variables included in our study, while Table D-2 presents the correlations between these variables.

Table D-1. Descriptive statistics

Variable		N	Mean	Median	St. dev.	Min	Max
1.	Psychological ownership	129	4.549	4.857	1.534	1.000	7.000
2.	Perceived agency culture	129	2.620	2.333	1.590	1.000	7.000
3.	Stewardship behavior	129	6.090	6.000	0.698	3.670	7.000
4.	Age	129	47.180	47.000	10.160	23.000	71.000
5.	Sex	129	0.750	1.000	0.434	0.000	1.000
6.	Tenure	129	12.308	10.000	9.923	0.000	48.000
7.	Family firm	129	0.540	1.000	0.500	0.000	1.000
8.	Ownership shares	129	0.039	0.000	0.194	0.0000	1.000
9.	Firm size	129	267.570	113.000	420.169	26.000	2369.000
10.	Data collection	129	0.209	0.000	0.408	0.000	1.000

Table D-2. Correlation matrix

Variable		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	Psychological ownership	1									
2.	Perceived agency culture	0.043	1								
3.	Stewardship behavior	0.277 ***	-0.040	1							
4.	Age	0.160 *	-0.027	0.118	1						
5.	Sex	-0.084	-0.051	-0.011	0.180 **	1					
6.	Tenure	0.281 ***	-0.089	0.140	0.532 ***	0.069	1				
7.	Family firm	0.228	0.215 **	0.202 **	-0.091	-0.059	0.037	1			
8.	Ownership shares	0.009 ***	-0.053	-0.219 **	0.036	0.115	0.124	-0.138	1		
9.	Firm size	-0.104	0.053	0.036	-0.006	0.204 **	-0.025	-0.089	0.077	1	
10.	Data collection	-0.014	0.224 **	-0.224 **	-0.113	0.031	-0.153 *	-0.025	0.094	-0.106	1

Pearson correlation coefficients are used for the correlations between two metric variables; Point-biserial correlations are used for the correlations between a metric and a dichotomours variable; Phi values are used for the correlations between two dichotomous variables.
Significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

D.5.2 Main Results

To test our hypotheses, we used several empirical techniques including correlations, multiple regression and t-tests, as explained below. For performing our analyses, we have relied on IBM SPSS Statistics (Version 27). Table D-3 presents the results of our regression analyses. Model I includes the control variables, while model II comprises the control variables as well as the hypothesized direct effect in H1. Model III displays the full model, consisting of the control variables, the hypothesized direct effect and the interaction effect, as hypothesized in H2.

Table D-3. Regression analysis results

Dependent Variable: Stewardship behavior

	Model I			Model II			Model III		
	Standardized Beta (Standard Error)	**p-Value**	**VIF**	**Standardized Beta (Standard Error)**	**p-Value**	**VIF**	**Standardized Beta (Standard Error)**	**p-Value**	**VIF**
Independent Variables									
Psychological Ownership (PO)				0.231 ** (0.041)	0.012	1.167	0.227 ** (0.041)	0.013	1.167
Perceived Agency Culture (AC)				-0.098 (0.039)	0.276	1.139	-0.099 (0.041)	0.264	1.139
Interaction effect: PO*AC							0.172 ** (0.023)	0.042	1.022
Control Variables									
Age	0.082 (0.007)	0.434	1.437	0.074 (0.007)	0.470	1.487	0.088 (0.007)	0.384	1.494
Gender	-0.009 (0.145)	0.921	1.106	0.005 (0.143)	0.954	1.122	0.001 (0.141)	0.995	1.122
Tenure	0.120 (0.007)	0.250	1.462	0.054 (0.007)	0.605	1.542	0.027 (0.007)	0.796	1.568
Family firm	0.179 ** (0.123)	0.044	1.054	0.152 * (0.127)	0.097	1.171	0.157 * (0.125)	0.082	1.172
Ownership shares	-0.209 ** (0.321)	0.021	1.077	-0.215 ** (0.314)	0.015	1.078	-0.206 ** (0.310)	0.018	1.081
Firm size	0.043 (0.000)	0.634	1.082	0.066 (0.000)	0.453	1.099	0.071 (0.000)	0.416	1.100
Data collection	0.017 (0.151)	0.848	1.054	0.033 (0.152)	0.710	1.121	0.033 (0.150)	0.705	1.121
Constant	5.601 ***	0.000		5.674 ***	0.000		5.645 ***	0.000	
F-Statistics	2.117 **	0.047		2.575 ***	0.010		2.803 ***	0.004	
adjusted R^2	0.058			0.100			0.123		
N	129			129			129		

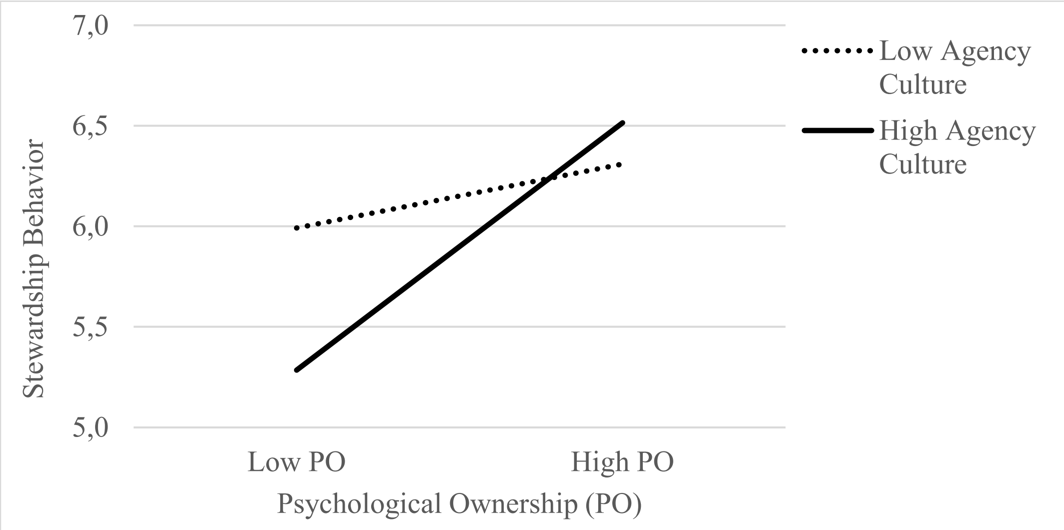
Significance: *p < 0.1, **p < 0.05, ***p < 0.01

With an adjusted R^2 of 0.123 for our full model (model III), the predictive validity of our model is in line with those of other studies examining psychological ownership and agency-stewardship relationships (e.g., Chua et al. 2003; Henssen et al., 2014; Schulze et al., 2001; van Dyne and Pierce, 2004). To address the potential problem of multicollinearity, we included the variance inflation factors (VIFs) in our regression analyses. None of these VIFs exceeded the value of 1.568, suggesting that multicollinearity is not a concern in our study (cf. Hair et al., 2014).

Our final regression results (model III) show a significant direct effect of psychological ownership on stewardship behavior ($p < 0.05$). This result confirms H1 that the psychological ownership of employees toward their company is positively related to their stewardship behavior. The full model (model III) further shows that the interaction term of psychological ownership and a perceived agency culture is significant ($\beta = 0.172$; $p < 0.05$), too, which provides support for H2: the positive relationship between an employee's psychological ownership and his/her stewardship behavior is moderated by a perceived agency culture.

To interpret the significant interaction effect, we plot this relationship in Figure D-2, which indicates that the degree of the psychological ownership-stewardship behavior relationship depends on the manager's perception of the extent of the agency culture in the firm. That is, as suggested in H2, for managers with a relatively low level of psychological ownership, a high perception of an agency culture is detrimental to the translation of psychological ownership into stewardship behavior. However, for managers with a high level of psychological ownership, such managers exhibit high levels of stewardship behavior regardless of the level of the agency culture. That is, our findings indicate that an agency culture mainly affects the psychological ownership–stewardship behavior relationship for managers with low levels of psychological ownership, but not so for managers with high levels.

Figure D-2. Interaction plot of psychological ownership and perceived agency culture on stewardship behavior



D.5.3 Robustness Check

As outlined by Miller and Le Breton-Miller (2006), the issuance of formal ownership shares to employees could function as an incentive that promotes stewardship behavior. Furthermore, as indicated above, stock ownership might influence the emergence of feelings of ownership (Wasserman, 2006). Thus, holding shares in the company might affect the dependent variable (stewardship behavior) as well as the main independent variable (psychological ownership). To rule out the possibility that our results are driven by such stock ownership, we investigated the potential impact of ownership shares on psychological ownership and stewardship behavior. First, we found that the correlation between the variables of ownership shares and psychological ownership (cf. Henssen et al., 2014) reported in Table D-2 is not significant (beta = 0.130, p = 0.885). This is in line with the research by Pierce et al. (2001), who find that psychological ownership does not necessarily require legal ownership. However, the correlation between the variables of ownership shares and stewardship behavior is significant at $p < 0.05$ (beta = -0.219, p = 0.013; see Table D-2). Thus, we ran a separate regression model (not tabulated) excluding the five cases in which the respondents held ownership shares. This additional regression model was meant to rule out the possibility that the significant findings in our main analyses presented in Table D-3 were driven by these five cases in which the respondents not only had a certain level of psychological ownership, but also held formal ownership stakes. In our additional (untabulated) model excluding these five cases, we found no significant differences from our main analyses in Table D-3. While the number of observations was reduced by five observations only, this robustness check nonetheless indicates that our results are robust to employees having or not having formal ownership in addition to their psychological ownership.

D.6 Discussion and Implications

Our study investigated whether psychological ownership might result in pro-organizational stewardship behavior and whether this relationship is affected by a perceived agency culture. We used ordinary least squares regression analyses and a sample of the highest ranked financial managers of 129 German firms to test our two hypotheses. Our analyses offer some theoretical and practical implications and point to future research avenues, which are discussed next.

D.6.1 Implications for Theory

Based on the prior literature suggesting that the underlying cognitive and affective aspects of stewardship behavior might resonate with the determinants of psychological ownership, we proposed a positive relationship between psychological ownership and stewardship behavior. Our findings support this hypothesis. That is, we confirm the positive effect of psychological ownership on stewardship behavior suggested by prior research on the role of psychological ownership as an antecedent of stewardship behavior (Henssen et al., 2014; Hernandez, 2008, 2012).

Furthermore, we address the call by Dawkins et al. (2017), who claim that research on the boundary conditions of psychological ownership that prevent or reinforce the unfolding of its pro-organizational outcomes is still scarce. Based on the prior literature, we assumed that the positive psychological ownership-stewardship behavior relationship is negatively affected by high levels of perceived agency culture. Indeed, our results indicate that managers' perceptions of the extent of the agency culture affect the psychological ownership-stewardship behavior relationship. It appears that for managers with relatively low levels of psychological ownership, the effect of an agency culture on this relationship plays a prominent role and a more pronounced agency culture makes it less likely that such managers will behave in line with stewardship theory. However, this does not seem to hold for managers with very high levels of psychological ownership. Such managers seem to display stewardship behavior irrespective of the perceived level of an agency culture. This finding extends the research by Sieger et al. (2013), who identify explicitly the agency mechanisms that affect the pro-organizational outcomes of psychological ownership. Our results also show that an implicit agency culture could affect the unfolding of desirable outcomes of psychological ownership such as stewardship behavior.

The finding that managers with very high levels of psychological ownership seem unaffected in developing stewardship behavior even when facing a high agency culture is somewhat surprising considering earlier research suggesting that an agency-like governance culture is always detrimental to managers' stewardship-oriented motivation and behavior and thus counterproductive (Chrisman et al., 2007; Davis et al., 1997; Madison et al., 2017). Our results suggest that very high levels of psychological ownership may make a manager immune to even a high agency culture and thus qualify the universal negative effect of the presence of an agency culture on stewardship behavior. A reason for this unexpected observation may be that high levels of psychological ownership turn salaried managers (i.e., agents) into psychological principals (Sieger et al., 2013) and that their feeling of possession makes them go the "extra mile for the firm" when others will not and thus create an agency-like culture (Ramos et al., 2014). Another potential explanation for our finding is in line with the results of Zhang et al. (2021, p. 751), who suggest that if employees experience high levels of psychological ownership, they "tend to feel a greater right to exert influence on the development of the organization", which in turn promotes them to "protect, care and sacrifice for their organization" (Pierce et al., 2001, p. 303). We could therefore assume that if managers with a high degree of psychological ownership perceive a high agency culture that might endanger the well-being of the company, these managers take extra care of the company and its well-being in a particularly responsible and stewardship-like manner to compensate for the deficits of the perceived harmful agency culture. This situation is addressed in prior research as the adaption of employees to the climate in which they work, striving for some homeostatic balance in their environment (Schneider, 1975). Given our data limitations, we cannot yet assess which of the two explanations – or even an explanation beyond these two – would best explain our findings on very high levels of psychological ownership.

In sum, our study highlights one boundary condition (Whetten, 1989) – the level of psychological ownership – of the aforementioned supposed detrimental impact of an agency culture on managers' development of stewardship behavior (Chrisman et al., 2007; Davis et al., 1997; Madison et al., 2017). Our results thus provide a counterpoint to the commonly expressed belief that an agency culture is always detrimental to individual stewardship behavior (e.g., Davis et al., 1997; Hernandez, 2012; Quinn et al., 2018), an issue particularly relevant to the literature on privately held and family firms that has extensively built upon agency and stewardship theory (Calabrò et al., 2019; Chrisman, 2019;). Future studies empirically testing agency and stewardship theory must therefore consider including psychological ownership in their empirical models since our results indicate that high levels of psychological ownership may make employees somewhat immune to pronounced agency cultures. At the same time, given our limitations due to the cross-sectional nature of our data, our results point to the need to examine further the effects of managers with such high levels of psychological ownership and what they may promise for businesses.

D.6.2 Implications for Practice

Our study is not only relevant for furthering agency and stewardship theory, but also offers several implications for practice. First, our findings indicate that formal ownership might be unnecessary to turn employees into good stewards of the company, as suggested by Miller and Le Breton-Miller (2006). Our results imply that employees' psychological ownership might be sufficient to turn them into pro-organizational stewards (cf. Sieger et al., 2013). Our results are thus particularly interesting for companies (e.g., privately held firms, family firms, and small and medium-sized enterprises) interested in overcoming agency-related problems by encouraging employees to behave like stewards, but cannot or do not want to grant them formal ownership (Appelbaum and Kamal, 2000; Schulze et al., 2001). This might be because (1) the issuance of shares to employees would dilute control over the (family) firm, (2) employee stock ownership may impede by the legal form of the firm (not publicly listed), and (3) the implementation of stock ownership programs would be too costly (Sieger et al., 2013; Zellweger, 2017). In these cases, rather than granting ownership shares to reduce agency costs, an adequate alternative for principals (e.g., firm owners) might be to invest in employees that exhibit a high degree of psychological ownership (or at least a high potential to develop it), as such employees might show the inherent ability to engage in stewardship behavior (Sieger et al., 2013). Firm owners interested in developing psychological ownership in employees ought to refer to the review by Dawkins et al. (2017) and meta-analysis by Zhang et al. (2021), which provide an excellent overview of the organizational antecedents that reinforce the development or psychological ownership of employees.

Second, our study holds implications for the top executives of organizations in which an agency culture might prevail. Our study implies that employees with lower levels of psychological ownership are not likely to develop pro-organizational stewardship behavior due to the pronounced agency culture. The very measurement of our agency culture construct, but also related research (e.g., Whisler, 1984; Sievinen et al., 2020), points out that organizational leaders' behavior is especially relevant for employees with low levels of psychological ownership in hindering stewardship behavior. In such settings, top executives aiming to promote pro-organizational stewardship behavior among their employees might need to consider their own behavior, which might appear as self-serving and overly reliant on formal control mechanisms (Davis et al., 2010; Pearson and Marler, 2010). For such executives whose subordinates show low levels of psychological ownership, our findings imply that they may need to show less self-serving behavior and consider reducing the application of formal agency control mechanisms to reduce the perceptions of an agency culture in the organization and raise stewardship behavior among employees.

Relatedly, as outlined by Neubaum et al. (2017), companies can develop and foster an organizational climate characterized by specific values, practices, and behaviors. If principals want to instill a stewardship culture that actively promotes stewardship behaviors by employees, they must consider that "the behavioral process of establishing a stewardship culture in an organization begins with the stewardship motives of the leader" (Pearson and Marler, 2010, p. 1120). However, the advantages of stewardship "may not fully be realized if only the firm's leader practices stewardship" (or only subordinates do so), while organizational leaders maximize their own utility (Pearson and Marler, 2010, p. 1117). Our findings shed light on the dynamics between employee behavior and their perception of the behavior of organizational leaders. As a consequence, practitioners may also use the applied measurements as tools to diagnose and sample their employees to (1) better understand how employees perceive their organization's culture and thus recognize areas that need further attention or adjustment from management as well, (2) identify the extent to which a firm's culture is characterized by values of agency or stewardship and then "better allocate resources within the firm" (Neubaum et al., 2017, p. 53; cf. Davis et al., 2010), and (3) engage in leader-member exchanges driven by the same motives to allow the advantages of stewardship to fully unfold.

In sum, our findings imply that principals such as firm owners have two options to foster stewardship behavior among their managers: (1) select or promote employees or managers who already show substantial psychological ownership or at least a strong potential to develop it and (2) establish a non-agency culture (e.g., stewardship culture) that enables even employees or managers with lower psychological ownership to develop into stewards.

D.7 Limitations and Future Research Agenda

Our research is subject to some limitations. First, due to our cross-sectional research design, there might be some constraints on the direction of the causal effects found. That is, while previous work on psychological ownership and stewardship behavior supports the causal relationship argued for in our study (Henssen et al., 2014; Hernandez, 2012; Wagner et al., 2003), our cross-sectional evidence does not allow for a real test of this causal relationship. Consequently, to address this limitation, longitudinal studies of the relationship between psychological ownership and stewardship behavior would be desirable. Such studies could address the time horizons through which psychological ownership and stewardship behavior evolve or erode, as both might take a considerable amount of time to develop (Corbetta and Salvato, 2004; Davis et al., 1997). Second, like most empirical studies, we face the threat of omitted variables. That is, independent or moderating variables not been considered in our study might affect stewardship behavior. For instance, our study is limited to the moderating effects of an overall agency culture. To create a more comprehensive view of the effects of corporate governance mechanisms rooted in an agency culture, it might be fruitful to additionally check for the potential moderating effects of agency control mechanisms such as financial and non-financial incentives on the development of stewardship behavior. Third, for several of the key constructs used in this study (e.g., stewardship behavior), further measurements are available in the literature (e.g., Barbuto and Wheeler, 2006; Groesbeck, 2001; Neubaum et al., 2017). While we relied on widely referenced scales, we cannot rule out the possibility that different construct measurements would have led to different results. Corroborating our results with alternative measures would thus be a worthwhile endeavor for future research. Fourth, our study is based on the views of financial managers and thus single respondents from the sample firms. To further validate our findings on the coexistence of agency and stewardship issues in firms, it would be interesting to study organizational coalitions between organizational leaders and other managers/employees. Thus, dyadic or even triadic surveys addressing multiple respondents in each firm could provide an even deeper understanding of their perceptions of an agency culture and stewardship behavior in the firm (cf. Madison et al., 2017). Fourth, we call for more fine-grained research analyzing the boundary conditions under which psychological ownership could unfold its desirable outcomes and which factors might prevent this unfolding.

Appendix Section D

Table D-4. Scale items, reliabilities, and factor loadings

Construct	Item	Cronbach's α	CR	AVE	Factor Loadings
Psychological ownership	This is MY organization.	0.901	0.919	0.620	0.814
	I sense that this organization is OUR company.				0.786
	I feel a very high degree of personal ownership for this organization				0.865
	I sense that this is MY company.				0.845
	This is OUR company				0.761
	Most people working for this organization feel as though they own the firm.				0.721
	It is hard for me to think about this organization as MINE. (reversed)				0.705
Agency culture	Our firm's organizational leaders use their power and authority to serve their own interests.	0.895	0.934	0.826	0.863
	Our firm's organizational leaders seek perks and benefits to serve their own rather than organizational interests.				0.942
	Our firm's organizational leaders have strategic initiatives that serve their own rather than organizational interests.				0.919
Stewardship behavior	I have initiatives that serve company's interest more than my own.	0.619	0.788	0.555	0.793
	I believe that I have initiatives that are credible and attractive.				0.775
	I take a long-term approach more than a short-term approach to business.				0.661

References Section D

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E. Discussion and Conclusion

E.1 Summary and Contribution

“The pursuit of performance has no greater ally than an employee who feels ownership.”
(Olkers et al., 2017, p. v).

Retaining key employees is of particular importance for companies to become or remain successful in a highly competitive business environment (Rousseau, 1998; Schermuly, 2021). However, in a corporate and work environment, that might push employee’s commitment towards and identification with their employing company to its limits (Feeney et al., 2018; Riketta & van Dick, 2005; Yip et al., 2018), research has increasingly focused on the emergence of psychological ownership as a form of employees’ organizational attachment (cf. Dawkins et al., 2017; Zhang et al., 2021). Following the psychology of mine and possession (Etzioni, 1991; Furby, 1991), ‘mine’ is a small word but it has the power to control individuals’ behaviors and is associated with feelings of ownership, known as psychological ownership (Pierce et al., 2003, 2001; Rudmin, 1994). In an organizational context, psychological ownership is frequently proposed to explain “why organizational members work harder for the organization as they are actually paid to do” (Bernhard, 2011, p. 103). Thus, ownership feelings could motivate employees to go the extra mile for the firm (Ramos et al, 2014). This might also hold for financial managers, who might inhabit a crucial role in strategy development and implementation, but are also susceptible to several agency conflicts due to their multiple roles and responsibilities (Caglio et al., 2018; Hiebl, 2015; Indjejkian and Matějka, 2009). In light of these arguments, questions regarding the antecedents and implications of financial managers’ psychological ownership arise. Thus, following the theory of psychological ownership and building on prior research on psychological ownership and financial managers, this dissertation aimed to address the following overall research question:

How can firms contribute to the development of their financial managers’ psychological ownership to enhance their pro-organizational behavior?

Rather than attempting a comprehensive assessment of all factors related to financial managers’ psychological ownership, the preceding Sections focus on small stepping stones that could contribute to the puzzle of how ownership feelings in financial managers might arise, as well as how they could affect their behavior.

Essay 1 (chapter B), entitled "A Complementarity Perspective on the 'Roots' of and 'Routes' to Psychological Ownership – The Interplay between Financial Managers' Autonomy, Organizational Tenure, and Perceived Justice", aimed to advance the understanding of the antecedents of financial mangers' ownership feelings by examining the interaction between well-known 'routes' to and 'roots' of psychological ownership. That is, the potential complementarity between financial manager's autonomy, their organizational tenure, and perceived justice was examined to address the following research question: "Are financial managers' autonomy, as a reflection of the 'having control' route, their tenure within the company, as a reflection of the 'intimate knowledge' route, and their perception of organizational justice, as a reflection of the 'having a place' root, complements with regard to their effect on psychological ownership?" The findings implied a positive and significant interaction effect of organizational justice ('having a place' root) and autonomy ('having control' route) on psychological ownership, which again increased when employees are long tenured ('intimate knowledge' route). Thus, this essay allows to conclude on some of the potentially multiple interactions among different 'roots' of and 'routes' to psychological ownership (Pierce et al., 2003, 2001). It thus supports the general idea of complementarity that the benefits of one factor are enhanced by the (increased) use of another factor (Milgrom and Roberts, 1995). Essay 1 primarily contributes to theory of psychological ownership by examining the proposed but so far (to the best of my knowledge) unexamined interaction effects of its 'roots' and 'routes'. Furthermore, to my best knowledge, Essay 1 (chapter B) is the first that examined organizational justice as an overall-latent construct as well as its four subdimensions with regard to psychological ownership. In doing so, Essay 1 contributes to the mixed findings in prior research regarding the effects of distributive and procedural justice as well as on the neglected effects of interpersonal and informational justice on psychological ownership (Chi and Han, 2008; Sieger et al., 2011). While the results do not indicated a direct effect of each organizational justice dimension (distributive, procedural, interpersonal, informational) on psychological ownership, the findings suggested that each dimension on its own reinforces the interaction effect of autonomy and employees' tenure on psychological ownership. At last, Essay 1 (chapter B) extends research on psychological ownership in management accounting literature (e.g., Haesebrouck, 2021), by analyzing why ('roots' of psychological ownership) and how ('routes' to psychological ownership) financial managers experience ownership feelings.

Based on prior literature, Essay 2 (Chapter C), entitled “How to Evoke Entrepreneurial Behavior in Middle Managers: Involve Them in Strategy Development and Create Psychological Ownership”, aimed to address the following research questions: (1) “Is middle managers’ involvement in strategy development associated with their entrepreneurial behavior”?, (2) “How do different dimensions of middle managers’ involvement in strategy development (i.e., content- and process-related involvement) affect their entrepreneurial behavior?”, and (3) “Does psychological ownership mediate the relationship between middle managers’ involvement in strategy development and their entrepreneurial behavior?”. The results indicated that financial mangers’ content-related involvement in strategy development was related to their entrepreneurial behavior, when they simultaneously experienceed psychological ownership. Insofar as financial managers lack ownership feelings, their content-related involvement does not cause them to act entrepreneurially. Regarding financial managers process-related involvement in strategy development, the findings indicated that this is positively related to their entrepreneurial behavior while it does not affect their psychological ownership. Thus, the primary contribution of Essay 2 is to literature on strategy development and entrepreneurial behavior of employees. The results allow for a deeper understanding of the psychological dimension underlying financial managers involvement in strategy development, as called for by, e.g., Wang et al. (2022) and Wooldridge et al. (2008). Moreover, Essay 2 (chapter B) contributes to literature on entrepreneurial behavior of financial managers in existing organizations. Prior research most often relies on the existence and financial mangers’ perception of organizational, job- and work-related factors that are suggested to be necessary for the translation into entrepreneurial behavior (e.g., Hornsby et al., 2009, 2002; Kuratko et al., 2005a, 2005b). Essay 2 extends this research by introducing psychological ownership as a mediator in the relationship between organizational and work-related factors (financial managers involvement in strategy development) and entrepreneurial behavior of employees that goes beyond the mere existence and employees’ perceptions of such factors.

Essay 3 (chapter D), entitled “Psychological Ownership and Stewardship Behavior: The Moderating Role of Agency Culture” was set to make a contribution regarding the boundary conditions under which psychological ownership unfolds into behavioral consequences of financial managers. This has been called for by, e.g., Dawkins et al. (2017) and Renz and Vogel (2022). Thus, Essay 3 addressed the following research question: “How does the perception of an agency culture affect the translation of employees’ psychological ownership into stewardship behavior?”. First, the findings indicated that psychological ownership is positively and significantly related to stewardship behavior. Second, for employees’ experiencing low levels of psychological ownership, a prevailing agency culture could harm their development of stewardship behavior, which has already been suggested in prior research (Davis et al., 1997; Hernandez, 2012). Surprisingly, for managers experiencing high degrees of ownership feelings, their perception of an agency culture seems less harmful, as they show strong engagement in stewardship behavior. Thus, our findings provide a contrary viewpoint to the generally accepted assumption that an agency culture inevitably has a detrimental impact on stewardship behavior (Davis et al., 1997; Hernandez, 2012; Quinn et al., 2018).

To summarize the findings with regard to this dissertations' overall research question: Firms can contribute to the development of their financial managers' psychological ownership by granting them autonomy, treating them fairly in terms of organizational justice, and by involving them in strategy development. If financial managers experience psychological ownership this might cause them to engage in entrepreneurial and stewardship behavior.

The following Table E-1 provides an overview of each essay's underlying research question(s) and the results obtained.

Table E-1. Overview of each essay's underlying research question/s and the results obtained

	Essay 1 (Chapter B)	**Essay 2 (Chapter C)**	**Essay 3 (Chapter D)**
Title	A complementarity perspective on the 'roots' of and 'routes' to psychological ownership: The interplay between financial managers' autonomy, organizational tenure, and perceived justice	How to evoke entrepreneurial behavior in middle managers: Involve them in strategy development and create psychological ownership	Psychological ownership and stewardship behavior: The moderating role of agency culture
Research Question(s)	Are financial managers' autonomy, as a reflection of the 'having control' route, their tenure within the company, as a reflection of the 'intimate knowledge' route, and their perception of organizational justice, as a reflection of the 'having a place' root, complements with regard to their effects on psychological ownership?	- Is middle managers' involvement in strategy development associated with their entrepreneurial behavior? - How do different dimensions of middle managers' involvement in strategy development (i.e., content- and process-related involvement) affect their entrepreneurial behavior? - Does psychological ownership mediate the relationship between middle managers involvement in strategy development and their entrepreneurial behavior?	How does the perception of an agency culture affect the translation of employees' psychological ownership into stewardship behavior?
Key Findings	Identification of the complementarity between financial managers' autonomy, as a reflection of the 'having control' route, their tenure within the company, as a reflection of the 'intimate knowledge' route, and their perception of organizational justice, as a reflection of the 'having a place' root.	- Identification of content- and process-related involvement in strategy development as potential antecedents to entrepreneurial behavior. - Identification of psychological ownership as potential antecedent of entrepreneurial behavior. - Identification of psychological ownership as mediator in the relationship between content-related involvement in strategy development and psychological ownership.	- Identification of stewardship behavior as an outcome of psychological ownership. - Identification of an organization's agency culture (operationalized as agency-related behavior of organizational leaders) as potential moderator in the relationship between financial mangers' psychological ownership and their stewardship behavior.

E.2 Practical Implications

As outlined in the introduction, maintaining key employees, such as financial managers, in a competitive and rapidly changing business environment is crucial for firms to become or remain successful (Coyle-Shapiro & Shore, 2007; Herrera & Heras-Rosas, 2021; Riketta and van Dick, 2004; Rousseau, 1998; Santana and Cobo, 2020; Schermuly, 2021). However, current developments in the business and work environment might erode financial managers' attachment to their organization such that they might act as independent agents and pursue their own interests rather than acting in the best interest of the company (Baruch, 1998; Bernhard, 2011; Braganza et al., 2021; Cavanaugh and Noe, 1999; Cohen, 1993; Malhotra, 2021). To cope with these contradicting tendencies, sound principles of employee-organization relationship management and its enhancement (Coyle-Sahpiro and Shore, 2007) that build on attachment and "strategies to re-engage the employee's heart and mind with the work" and the organization (Olkers, et al., 2007, p. v), are needed. The results of this dissertation could stimulate corporations' strategy of the employee-organization relationship.

First, this dissertations' findings indicate that a strategy that allows employees to re-engage with their employing organization might be a clever application and combination of factors that could promote ownership feelings. In this vein, the results of Essay 1 presented in Chapter B provide evidence that financial mangers' autonomy, their organizational tenure and their perception of organizational justice reinforce each other when promoting ownership feelings. While financial managers might respond differently to factors resonating with a single 'root' of or 'route' to psychological ownership, the findings obtained that a clever combination of factors resonating with different 'roots' of and 'routes' to psychological ownership might maximize the impact on the development of financial managers' psychological ownership. Additionally, as a specific single factor (autonomy OR organizational justice OR long organizational tenure) might not be equal attractive for all (financial) managers in developing psychological ownership, a larger number of managers might respond to an application of factors resonating with different 'roots' of and 'routes' to psychological ownership. Moreover, the results of Essay 1 (Chapter B) indicated that each justice dimension on its own (distributive, procedural, informational, interpersonal) reinforces the interaction effect between financial mangers' autonomy and their organizational tenure on psychological ownership. This might be of interest for those companies that could not remunerate comparably well with the compensation of competitors on the labor market (in terms of distributive justice), as my findings showed that procedural justice in combination with autonomy and tenure has an even stronger effect on ownership feelings than distributive justice.

Second, Essay 2 in Chapter C holds implications for firms striving for corporate entrepreneurship at the firm level. Thus, my findings indicate that open up strategy work (content- and process-related involvement in strategy development) to financial managers could allow them to engage in entrepreneurial behavior at the individual level, which seems to be necessary in order to achieve corporate entrepreneurship at the organizational level (Hornsby et al., 2002; Kuratko et al., 2005a). However, a careful calibration of financial managers' involvement in strategy development is needed. Regarding to my findings, open up process-related strategy work to financial managers could cause them to engage into entrepreneurial actions, while does not come along with the benefit that they develop a strong feeling of ownership towards their organization. This would be an initial step for corporations that intend to engage in corporate entrepreneurship. However, financial managers' content-related involvement in strategy development only promotes their entrepreneurial behavior when they experience ownership feelings simultaneously, but might impede it in the absence of psychological ownership. Thus, when open up strategy work to financial managers, organizational leaders should consider that different dimensions of financial managers' involvement in strategy development (content- and process related) could unfold different effects on behavioral outcomes and this relationship mediated by financial managers' experience of ownership feelings.

Third, investing in strategies that enable financial managers to experience psychological ownership might be worthwhile for companies that wish to benefit from the pro-organizational effects of formal ownership such as stewardship behavior while at the same time cannot or do not want to provide formal ownership (Zellweger, 2017). Like formal ownership, psychological ownership may enable financial managers to act in the best interest of their company (Henssen et al., 2014; Renz and Vogel, 2022; Sieger et al., 2013). However, privately held firms such as most family firms or small and medium-sized companies might not be able or willing to provide stock ownership or options to their financial managers as this might be accompanied with a dilution of control, be too costly or impeded by their legal form (Sieger et al. 2013; Zellweger, 2017). According to the results of Essay 3 (Chapter B), companies could rely on psychological ownership to align the interests of the financial managers with their interests and goals, which makes them to act as stewards of their firms' assets (see results of Essay 3, Chapter D; and Sieger et al., 2013; Renz and Vogel, 2022). Moreover, the results of Essay 3 (Chapter D) clearly showed that the translation of ownership feelings into pro-organizational outcomes – e.g., stewardship behavior – is significantly influenced by the organizational culture – e.g., an agency culture –, operationalized as the behavior of the organizational leader. Thus, the obtained results offer guidance for leadership by highlighting the pivotal role of the leaders' own behavior and its effect on financial managers' stewardship behavior. That is, for financial mangers exhibiting low levels of psychological ownership their organizational leaders' self-serving behavior has a detrimental effect on the relationship between their ownership feelings and stewardship behavior, while this does not hold for financial managers that show high levels of psychological ownership. Consequently, organizational leaders should take into account their own role and behavior as this might affect the translation of financial managers' ownership feelings into pro-organizational behaviors, such as stewardship behavior (Hiebl, 2015).

To summarize, this dissertation provides support for practice in the following three ways: (1) On the antecedent side, instead of relying on single antecedent factors to promote ownership feelings, e.g., autonomy OR organizational tenure OR organizational justice, which might not be equally attractive to all employees, the combination of different factors could be worthwhile (Essay 1). Additionally, it was found that involving financial managers in content-related strategy development could cause the emergence of ownership feelings (Essay 2). (2) On the outcome side, the present work sheds light on the important role of organizational culture (operationalized by the behavior of the organizational leaders) as a boundary condition which affects the emergence of stewardship behavior (Essay 3). At the same time, the results of Essay 3 indicate that financial managers who experience ownership feelings are likely to engage in entrepreneurial behavior. (3) Essay 3 (Chapter C) helped to explain how the linkage between organizational and work-related factors such as employees' involvement in strategy development and pro-organizational outcomes including their entrepreneurial behavior works. While financial managers' process-related involvement in strategy development is linked to their entrepreneurial behavior and does not cause them to experience ownership feelings, their content-related involvement in strategy development is linked to their entrepreneurial behavior only when they experience psychological ownership. Finally, it is important to note that the arguments above might not only refer to financial managers, but also are relevant for other employees within a company.

E.3 Limitations and Future Research

Despite the care taken in this scientific work, there are still limitations that must be acknowledged in accordance with scientific standards. As the limitations of each essay are specified in their respective subsections (see sections B.5.3., C.6, D.6.3.), this section will only cover the overarching limitations that will open up opportunities for future research to deepen existing knowledge in the field of psychological ownership and with regard to financial managers.

The three essays included in this dissertation are based on a cross-sectional research design addressing a single respondent in the targeted organizations. Although a cross-sectional research design is common in business research, it does not allow to draw causal inferences between the variables of interest but rather indicates correlations among them (Spector, 2019; van der Stede, 2014). Therefore, longitudinal and experimental studies are necessary to investigate the causal evolution of psychological ownership as a result of organizational antecedents, as well as the outcomes caused by ownership feelings. Such research designs are commonly applied in social psychology, while they simultaneously address potential endogeneity issues. For example, the experimental studies by Bae et al. (2023), Kirk and Rifkin (2021), and Nijs et al., (2022) in social psychological provide statistical support for the causal relationship between psychological ownership and stewardship behavior with regard to public goods (cf. essay 3). Moreover, future research is needed that addresses potential bidirectional or reverse effects in the relationship between financial managers' involvement in strategy development and their entrepreneurial behavior (cf., Essay 2 and Erhart et al., 2017). This might also hold for the link between financial managers' psychological ownership and their stewardship behavior, while the latter might shape organizational factors resonating with organizational antecedents of ownership feelings (cf., Essay 3 and Hernandez, 2012). Nonetheless, regarding the strong theoretical arguments depicted in the three essays and regarding prior research on psychological ownership that support the hypothesized relationships, we are confident that the results obtained are robust.

Although adopting a single respondent approach seems suitable for the overarching research objectives of this dissertation (see Section A.3), addressing multiple respondents in each company would provide fruitful avenues for future research. This would help in studying the context in which psychological ownership evolves and affects outcomes while simultaneously addressing potential issues stemming from common method bias. For instance, using a dyadic or even triadic survey enables the examination of collaborations and cooperation among multiple employees. This approach could provide insights into how psychological ownership, particularly collective-oriented psychological ownership, may develop within teams (Renz and Posthuma, 2022).

As outlined in the introduction, financial managers work environment is exposed to changes due to, e.g., digitalization or the COVID-19 pandemic, which might require them to work hybrid in multiple, digital and international teams (Kraus et al., 2023; Malhotra, 2021; Schermuly, 2021). As a result, these work conditions may create a spatial detachment between the managers and their employing organization, which could potentially affect their psychological attachment to the organization. Although Essay 1 and Essay 2 cover aspects of this new working environment with variables such as autonomy and involvement in strategy development and thus the mechanism of how companies deal with it, further research is needed. For example, in prior meta-analyses Baruch (1989) and Cohen (1993) found decreasing, but still significant, correlation coefficients between employees' organizational attachment and organizational outcomes such as performance, indicating a fade of employees' organizational attachment. Moreover, in their meta-analysis Riketta and van Dick (2004) found that on average employees' commitment (a form of employee attachment) towards their workgroup is stronger than their commitment towards their organization as a whole. This highlights the importance of the foci of employees' organizational attachment such as the workgroup or the organization (Riketta and van Dick, 2004). At the same time Malhotra (2021) suggests that in the future employees will carry out their work more virtually (not at the physical location of the employing organization) and that working in multiple workgroups will be of increasing relevance. Following these arguments, a decline in employees' organizational attachment, the identified stronger workgroup commitment (compared to organizational commitment) and the suggested importance of digital teamwork in the future of work implies a shift of employees' focus of work and thus their focus of attachment (Riketta and van Dick, 2004). This might also hold for employees' psychological ownership which could be experienced towards different target objects such as the organization as a whole, the work or job, and the work group. Thus, future research could explore how work conditions shaped by, e.g., digitalization might affect ownership feelings and could cause a shift from organization-based psychological ownership toward work-/job-based or workgroup psychological ownership (Peng and Pierce, 2015).

Furthermore, prior research indicates that the experience of psychological ownership might depend on the cultural context of the responding (financial) managers (Furby, 1978; Pierce et al., 2003). For example, it is suggested that individual-oriented psychological ownership will be stronger in individualistic Western cultures, while collective-oriented psychological ownership might be more prevalent in collectivistic Eastern cultures (Dawkins et al., 2017; Renz and Posthuma, 2022). As data collection took place in Germany only the generalizability of the results obtained might be limited. To further validate my findings and to obtain robust results, future research should collect data in other countries and ideally in more than one country to test for potential cultural differences (Taras et al., 2009).

More generally, to advance research on psychological ownership, future studies should examine the boundary conditions that may facilitate or hinder its development and its impact on outcomes. This includes investigating moderating factors, which prior research has mostly neglected so far (Dawkins et al., 2017; see Essay 3). Additionally, further research could also focus on the interplay of different antecedents of psychological ownership (Pierce et al., 2003, 2001). Essay 1 offers initial empirical insights into potential interaction effects among job/work-related factors. However, further research is desired to validate and expand these findings to other factors that may promote feelings of ownership.

Finally, with regard to financial managers, future research could consider psychological ownership as a factor elucidating potential role conflicts within or among the roles they might inhabit. Prior research indicates that financial managers might deal with tensions arising from their dual role, including both responsibility regarding strategy development and fiduciary responsibilities (Fourné et al., 2023; Indjejikian and Matějka, 2009). While research in this vein is often grounded in role-identity theory, suggesting that “there must be a link between a role and its owners’ identities” and their self-understanding (Gortezki et al., 2013, p. 46; cf. Chreim et al., 2007; Tillema et al., 2022), what becomes part of one’s self is described by theory of psychological ownership (Dittmar, 1992; Pierce et al., 2003). As the self-identity motive is seen as an origin of ownership feelings that might be linked to role-identity (Pierce et al., 2003), future research could integrate psychological ownership into research on financial managers’ roles to elucidate how they respond to potential conflicts within and among different roles or role changes.

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Hinweise zum Ausfüllen des Fragebogens:

- Bitte beantworten Sie alle Fragen so präzise wie möglich.
- Unter den vorgegeben Antwortalternativen gibt es keine „richtigen" oder „falschen" Antworten. Beantworten Sie die Fragen daher bitte genauso, wie sie Ihrer Einschätzung nach auf Sie bzw. Ihr Unternehmen zutreffen.
- Sofern nach konkreten Zahlen gefragt wird und Sie keine Zahlen angeben können, nehmen Sie bitte eine Schätzung vor.
- Nach Abschluss der Umfrage senden wir Ihnen gerne einen Bericht mit einer Zusammenfassung der Ergebnisse zu, wenn Sie dies wünschen.

☐ Ja, ich möchte einen Bericht mit einer Zusammenfassung der Forschungsergebnisse erhalten (bitte geben Sie in diesem Fall Ihre E-Mail-Adresse an).

☐ Ja, ich stimme zu, dass meine Daten zum Zwecke der wissenschaftlichen Forschung und Auswertung gespeichert werden.

Unternehmen:	
Abteilung:	
Position:	
Name:	
Straße:	
PLZ, Ort:	
E-Mail:	

- Wir werden Ihre Anonymität in jedem Fall wahren, indem wir die Daten so verwenden, dass in sämtlichen Auswertungen keinerlei Rückschlüsse auf die Angaben einzelner Antwortgeber und Unternehmen möglich sind. Sie können Ihre Anonymität jedoch auch selber wahren, indem Sie diese Seite separat zurücksenden.

Bitte beantworten Sie die folgenden Fragen zu Ihrer Person.

1. Sind Sie die ranghöchste Finanzmanagerin bzw. der ranghöchste Finanzmanager in Ihrem Unternehmen?

ja ☐ nein ☐

2. In welchem Jahr wurden Sie geboren?

Jahr: ____

3. Bitte geben Sie Ihr Geschlecht an.

weiblich ☐ männlich ☐

4. Welche Position haben Sie in Ihrem Unternehmen inne?

CFO und CEO	☐
CFO/Finanzchef	☐
Leiter Controlling	☐
Controller	☐
Buchhalter	☐
Sonstige:	____

5. Seit wie vielen Jahren sind Sie in Ihrer aktuellen Position in Ihrem Unternehmen tätig?

____ Jahre

6. Seit wie vielen Jahren arbeiten Sie für Ihr Unternehmen?

____ Jahre

7. Wie viele Jahre an Berufserfahrung haben Sie außerhalb Ihres Unternehmens sammeln können?

____ Jahre

8. Wie viele Jahre Berufserfahrung im Bereich des Rechnungswesens/der Finanzen haben Sie sammeln können, bevor Sie in Ihr Unternehmen eingestiegen sind?

____ Jahre

9. Was ist Ihr höchster Bildungsabschluss? *(Wenn die Antwort "abgeschlossenes Studium" lautet, fahren Sie bitte mit Frage 10 fort, andernfalls fahren Sie mit Frage 11 fort.)*

ohne Bildungsabschluss	☐
Volksschule/Hauptschule	☐
Realschule/mittlerer Schulabschluss	☐
Gymnasium/Fachoberschule/Hochschulreife	☐
Abgeschlossenes Studium	☐
Sonstiger:	____

10. *Wenn die oder der Befragte über ein abgeschlossene Studium verfügt:* Haben Sie einen Hochschulabschluss in einem wirtschaftsnahen Fach?

ja ☐ nein ☐

11. Sind Sie ein Mitglied der/einer kontrollierenden Unternehmerfamilie in Ihrem Unternehmen?

ja ☐ nein ☐

Bitte beantworten Sie die folgenden Fragen über die/den CEO Ihres Unternehmens.

(Auf Nachfrage kann der Begriff CEO wie folgt erläutert werden: *Bei einer AG handelt es sich hierbei beispielsweise um den Vorstandsvorsitzenden, bei einer GmbH mit einer Geschäftsführung um den Geschäftsführer.)*

12. In welchem Jahr wurde die/der CEO geboren?

Jahr: ____

13. Bitte geben Sie das Geschlecht der/des CEO(s) an.

weiblich ☐ männlich ☐

14. Seit wie vielen Jahre ist die/der CEO in ihrer/seiner aktuellen Position für Ihr Unternehmen tätig?

____ Jahre

15. Seit wie vielen Jahren arbeitet die/der CEO in Ihrem Unternehmen?

____ Jahre

16. Was ist der höchste Bildungsabschluss der/des CEO(s)? *(Wenn die Antwort "abgeschlossenes Studium" lautet, fahren Sie bitte mit Frage 17 fort, andernfalls fahren Sie mit Frage 18 fort.)*

ohne	☐
Volksschule/Hauptschule	☐
Realschule/mittlerer Schulabschluss	☐
Gymnasium/Fachoberschule/Hochschulreife	☐
Abgeschlossenes Studium	☐
Sonstiger:	____

17. *Wenn die/der CEO über ein abgeschlossenes Studium verfügt:* Hat die/der CEO einen Hochschulabschluss in einem wirtschaftsnahen Fach?

ja ☐ nein ☐

18. Ist die/der CEO Mitglied der/einer kontrollierenden Unternehmerfamilie in Ihrem Unternehmen?

ja ☐ nein ☐

Bitte beantworten Sie die folgenden Fragen zum Unternehmen, für das Sie arbeiten.

19. Hat Ihr Unternehmen jemals eine Risikokapitalfinanzierung erhalten? ***(Wenn ja, fahren Sie bitte mit Frage 20 fort, andernfalls fahren Sie bitte mit Frage 21 fort.)***

(Auf Nachfrage bitte die folgende Definition vorlesen: ***Unter Risikokapitalfinanzierung wird eine zeitlich begrenzte Form der Beteiligungsfinanzierung an zumeist jungen, innovativen, nicht börsennotierten Unternehmen verstanden, die sich durch ein überdurchschnittliches Wachstumspotenzial auszeichnen.*****)**

ja ☐ nein ☐

20. Wenn Ihr Unternehmen eine Risikokapitalfinanzierung erhalten hat, in welchem Jahr fand die erste Finanzierungsrunde statt?

Jahr: ______

21. Bitte geben Sie die Anteile am Eigenkapital Ihres Unternehmens an, die von den folgenden Gruppen gehalten werden.

______ % Familienmitglieder

______ % Nicht-Familienmitglieder

100 %

22. Hat Ihr Unternehmen einen Aufsichtsrat? (Wenn ja, fahren Sie bitte mit Frage 23 fort, andernfalls mit Frage 24.)

ja ☐ nein ☐

23. Bitte geben Sie die Anzahl der Sitze an, die von den folgenden Gruppen im Aufsichtsrat gehalten werden.

______ Familienmitglieder

______ Nicht-Familienmitglieder

Σ

24. Hat Ihr Unternehmen einen Beirat? ***(Wenn ja, fahren Sie bitte mit Frage 25 fort, andernfalls mit Frage 26.)***

ja ☐ nein ☐

25. Bitte geben Sie die Anzahl der Sitze an, die von folgenden Gruppen im Beirat gehalten werden.

______ Familienmitglieder

______ Nicht-Familienmitglieder

Σ

26. Bitte geben Sie die Anzahl der Sitze in Ihrem Top-Management-Team/Geschäftsführung an, die von folgenden Gruppen gehalten werden.

______ Familienmitglieder

______ Nicht-Familienmitglieder

Σ

27. Halten Sie Ihr Unternehmen für ein Familienunternehmen? ***(Wenn ja, fahren Sie bitte mit Frage 28 fort, andernfalls mit Frage 31.)***

ja ☐ nein ☐

28. Gehört die/der derzeitige CEO zu einer bzw. der Eigentümerfamilie des Unternehmens? ***(Wenn ja, fahren Sie bitte mit Frage 29 fort, andernfalls mit Frage 31.)***

ja ☐ nein ☐

29. Welcher Familiengeneration gehört die/der derzeitige CEO Ihres Unternehmens an?

1. (Gründerin/Gründer) ☐
2. ☐
3. ☐
4. ☐
5. oder höhere Generation ☐

30. Ist neben der/dem aktuellen CEO noch eine weitere, ältere Familiengeneration im Unternehmen aktiv?

ja ☐ nein ☐

31. Gehört Ihr Unternehmen zu einem Konzern?

Ja, es ist die oberste Muttergesellschaft. ☐

Ja, es ist eine Tochtergesellschaft eines inländischen Konzerns. ☐

Ja, es ist eine Tochtergesellschaft eines ausländischen Konzerns. ☐

Nein. ☐

Bitte beantworten Sie die folgenden Fragen.

**Die folgenden Aussagen beschäftigen sich mit dem „Eigentumsgefühl", das Sie für Ihr Unternehmen empfinden.
Bitte denken Sie nun zum Beispiel an ein Haus, ein Auto, einen Fernseher oder an etwas Ähnliches, das Ihr Eigentum ist oder das Ihnen mit jemandem zusammen gehört. Denken Sie an die Erlebnisse und Gefühle, die Sie mit der Aussage „DIES IST MEIN (UNSER) HAUS!" verbinden.**

Bitte kreuzen Sie im Folgenden die Antwortmöglichkeit an, die Ihre Einschätzung am besten wiedergibt.

		stimme überhaupt nicht zu						stimme voll und ganz zu
32.	Dies ist MEIN Unternehmen.	☐	☐	☐	☐	☐	☐	☐
33.	Ich fühle, dass dieses Unternehmen UNSER Unternehmen ist.	☐	☐	☐	☐	☐	☐	☐
34.	Ich empfinde ein starkes „Eigentumsgefühl" für dieses Unternehmen.	☐	☐	☐	☐	☐	☐	☐
35.	Ich fühle, dass es MEIN Unternehmen ist.	☐	☐	☐	☐	☐	☐	☐
36.	Dies ist UNSER Unternehmen.	☐	☐	☐	☐	☐	☐	☐
37.	Die meisten Mitarbeitenden fühlen sich wie Eigentümer des Unternehmens.	☐	☐	☐	☐	☐	☐	☐
38.	Es ist schwierig für mich, dieses Unternehmen als MEINS zu betrachten.	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit Sie persönlich den folgenden Aussagen zustimmen oder nicht zustimmen.

		stimme überhaupt nicht zu						stimme voll und ganz zu
39.	Ich mache oft innovative Vorschläge, um unser Geschäft zu verbessern.	☐	☐	☐	☐	☐	☐	☐
40.	Ich generiere oft neue Ideen, indem ich die Welt beobachte.	☐	☐	☐	☐	☐	☐	☐
41.	Ich generiere oft neue Ideen, indem ich beobachte, wie Menschen mit unseren Produkten und Dienstleistungen interagieren.	☐	☐	☐	☐	☐	☐	☐
42.	Ich generiere oft neue Ideen, indem ich unsere Kunden beobachte.	☐	☐	☐	☐	☐	☐	☐
43.	Ich gehe mutig mit einem vielversprechenden neuen Ansatz voran, wenn andere vorsichtiger wären.	☐	☐	☐	☐	☐	☐	☐
44.	Ich widme anderen Zeit, um ihnen zu helfen, unsere Produkte und Dienstleistungen zu verbessern.	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Ihr Unternehmen zutreffen.

Während des Strategieprozesses führt das Controlling die folgenden Aufgaben aus:

		überhaupt nicht						voll und ganz
45.	Unterstützung bei der Zielsetzung (z. B. durch die Quantifizierung der Unternehmensziele).	☐	☐	☐	☐	☐	☐	☐
46.	Bereitstellung strategisch relevanter Informationen/Analysen (z. B. zu internen Faktoren oder durch die kontinuierliche Überwachung von Wettbewerb, Markt, Kunden).	☐	☐	☐	☐	☐	☐	☐
47.	Administration/Koordination des Strategieprozesses.	☐	☐	☐	☐	☐	☐	☐
48.	Hinterfragen der Vorschläge des Managements (z. B. bezogen auf Realismus, Ziele und Annahmen).	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Ihr Unternehmen zutreffen.

Die Controlling-Abteilung bzw. die/der für Controlling Verantwortliche…

		überhaupt nicht						voll und ganz
49.	… berät das Management auf eigene Initiative hin mit Vorschlägen zur strategischen Entwicklung des Unternehmens.	☐	☐	☐	☐	☐	☐	☐
50.	… ist in Bezug auf strategische Inhalte einflussreich.	☐	☐	☐	☐	☐	☐	☐
51.	… beteiligt sich an Entscheidungen bei der Wahl der Strategie.	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über Ihre Person zustimmen oder nicht zustimmen.								
		stimme überhaupt nicht zu						stimme voll und ganz zu
52.	Die Anerkennung, die ich erhalte, ist meinen Leistungen angemessen.	☐	☐	☐	☐	☐	☐	☐
53	Ich erfahre für die zusätzliche Leistung, die ich erbringe, Anerkennung.	☐	☐	☐	☐	☐	☐	☐

54. Wenn Sie einen guten Job machen, wird Ihr Beitrag anerkannt?				
Ja, darauf kann ich mich verlassen.	Ja, höchstwahrscheinlich.	Etwa die Hälfte der Zeit.	Nein, nicht sehr wahrscheinlich.	Nein, es würde unbemerkt bleiben.
☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über Ihre Person zustimmen oder nicht zustimmen.								
		stimme überhaupt nicht zu						stimme voll und ganz zu
55.	Ich habe die Freiheit, meine Arbeit auszuüben.	☐	☐	☐	☐	☐	☐	☐
56.	Ich habe die Freiheit, fast alles zu tun, was ich in meinem Job will.	☐	☐	☐	☐	☐	☐	☐
57.	Ich habe die Möglichkeit unabhängig zu denken und zu handeln.	☐	☐	☐	☐	☐	☐	☐
58.	Ich habe die Kontrolle über mein eigenes Arbeitstempo.	☐	☐	☐	☐	☐	☐	☐
59.	Ich habe die Möglichkeit, meine Arbeit unabhängig von den Leitungsgremien (z. B. Vorstand und Aufsichtsrat) auszuüben.	☐	☐	☐	☐	☐	☐	☐
60.	Ich habe die Möglichkeit meine Arbeit unabhängig von anderen auszuüben.	☐	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beziehen sich auf das Ergebnis (z. B. Bezüge, Anerkennung und Beförderungen) Ihrer letzten Leistungsbeurteilung.								
		überhaupt nicht						voll und ganz
61.	Inwieweit spiegelt das Ergebnis Ihrer letzten Leistungsbeurteilung den Aufwand wider, den Sie in ihre Arbeit gesteckt haben?	☐	☐	☐	☐	☐	☐	☐
62.	Inwieweit ist das Ergebnis Ihrer letzten Leistungsbeurteilung angemessen für die Arbeit, die Sie geleistet haben?	☐	☐	☐	☐	☐	☐	☐
63.	Inwieweit spiegelt das Ergebnis Ihrer letzten Leistungsbeurteilung den Beitrag wider, den Sie für das Unternehmen geleistet haben?	☐	☐	☐	☐	☐	☐	☐
64.	Inwieweit ist das Ergebnis Ihrer letzten Leistungsbeurteilung im Verhältnis zu Ihrer Leistung gerechtfertigt?	☐	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beziehen sich auf die Führungsperson, die Ihre letzte Leistungsbeurteilung durchgeführt hat.								
		überhaupt nicht						voll und ganz
65.	Inwieweit hat sie/er Sie höflich behandelt?	☐	☐	☐	☐	☐	☐	☐
66.	Inwieweit hat sie/er Sie mit Würde behandelt?	☐	☐	☐	☐	☐	☐	☐
67.	Inwieweit hat sie/er Sie mit Respekt behandelt?	☐	☐	☐	☐	☐	☐	☐
68.	Inwieweit hat sie/er von unangemessenen Bemerkungen und Kommentaren Abstand genommen?	☐	☐	☐	☐	☐	☐	☐
69.	Inwieweit war sie/er in ihrer/seiner Kommunikation mit Ihnen aufrichtig?	☐	☐	☐	☐	☐	☐	☐
70.	Inwieweit hat sie/er das Leistungsbeurteilungsverfahren gründlich erklärt?	☐	☐	☐	☐	☐	☐	☐
71.	Inwieweit waren ihre/seine Erklärungen des Leistungsbeurteilungsverfahrens vernünftig?	☐	☐	☐	☐	☐	☐	☐
72.	Inwieweit hat sie/er Ihnen Einzelheiten rechtzeitig mitgeteilt?	☐	☐	☐	☐	☐	☐	☐
73.	Inwieweit hat sie/er ihre/seine Kommunikation/Nachrichten auf Ihre persönlichen Bedürfnisse zugeschnitten?	☐	☐	☐	☐	☐	☐	☐

Die folgenden Fragen beziehen sich auf die Leistungsbeurteilungsverfahren, die angewandt wurden, um Ihre Ergebnisse (z. B. Bezüge, Anerkennung und Beförderungen) zu ermitteln.

		überhaupt nicht						voll und ganz
74.	Inwieweit haben Sie während dieser Leistungsbeurteilungsverfahren Ihre Ansichten und Gefühle äußern können?	☐	☐	☐	☐	☐	☐	☐
75.	Inwieweit hatten Sie Einfluss auf die Ergebnisse, die durch diese Verfahren erreicht wurden?	☐	☐	☐	☐	☐	☐	☐
76.	Inwieweit wurden diese Verfahren in Ihrem Unternehmen auf Ihrer Managementebene einheitlich angewendet?	☐	☐	☐	☐	☐	☐	☐
77.	Inwieweit waren diese Verfahren frei von Verzerrungen?	☐	☐	☐	☐	☐	☐	☐
78.	Inwieweit basierten diese Verfahren auf genauen Informationen?	☐	☐	☐	☐	☐	☐	☐
79.	Inwieweit war es Ihnen möglich, gegen das Ergebnis aus der Anwendung dieser Verfahren Widerspruch einzulegen?	☐	☐	☐	☐	☐	☐	☐
80.	Inwieweit haben diese Verfahren ethische und moralische Standards eingehalten?	☐	☐	☐	☐	☐	☐	☐

81. Bitte geben Sie den Anteil der folgenden Vergütungskomponenten in Relation zur Gesamtvergütung an, die Sie im letzten Jahr erhalten haben.

- ☐ Grundgehalt ______ %
- ☐ Jährlich gewährte geldwerte Vorteile, z. B. Firmenwagen etc. ______ %
- ☐ Formelbasierte kurzfristige (d. h. jährliche) Anreize (d. h. Boni) ______ %

  (Formelbasierte Anreize basieren auf quantitativen Leistungsindikatoren, z. B. Abteilungsgewinn.)
- ☐ Formelbasierte langfristige Anreize (z. B. langfristiger Bonusplan) ______ %
- ☐ Formelbasierte Eigenkapitalanreize/Aktienvergütungsprogramme

  (z. B. Aktien, Aktienoptionen) ______ %
- ☐ Diskretionäre Anreize ______ %

  (Diskretionäre Anreize basieren auf dem subjektiven Urteil einer/eines Beurteilenden über die Leistung einer Führungskraft.)
- ☐ Andere Anreize ______ %

Summe 100 %

82. Wenn Sie formelbasierte Anreize erhalten, auf welchen Leistungskennzahlen basieren diese? *(Mehrfachnennungen möglich.)*

(1) Jahres-überschuss	(2) Betriebs-ergebnis	(3) Umsatzerlöse	(4) Rentabilitäts-kennzahlen (z. B. ROI, ROS)	(5) Wertbasierte Leistungskenn-zahlen (z. B. EVA)	(6) Nicht-finanzielle Leistungsziele	(7) Andere (bitte unten angeben)
☐	☐	☐	☐	☐	☐	☐

Wenn Ihre Antwort (7) lautet, geben Sie bitte an, auf welchen anderen Leistungskennzahlen Ihre formelbasierten Anreize basieren:

______

Bitte geben Sie an, inwieweit Sie persönlich den folgenden Aussagen zustimmen oder nicht zustimmen.		stimme überhaupt nicht zu						stimme voll und ganz zu
83.	Ich verfolge Initiativen, die den Interessen unseres Unternehmens mehr dienen als meinen eigenen.	☐	☐	☐	☐	☐	☐	☐
84.	Ich glaube, dass ich Initiativen verfolge, die glaubwürdig und attraktiv für unser Unternehmen sind.	☐	☐	☐	☐	☐	☐	☐
85.	Ich verfolge eher einen langfristigen als einen kurzfristigen Ansatz im Geschäft.	☐	☐	☐	☐	☐	☐	☐
86.	Die Leitung unseres Unternehmens nutzt ihre Macht und Autorität, um ihren eigenen Interessen zu dienen.	☐	☐	☐	☐	☐	☐	☐
87.	Die Leitung unseres Unternehmens sucht Vergünstigungen und Vorteile, um ihren eigenen statt den Interessen des Unternehmens zu dienen.	☐	☐	☐	☐	☐	☐	☐
88.	Die Leitung unseres Unternehmens verfolgt strategische Initiativen, die eher ihren eigenen als den Interessen des Unternehmens dienen.	☐	☐	☐	☐	☐	☐	☐
89.	In unserem Unternehmen gibt es persönliche direkte Beobachtung.	☐	☐	☐	☐	☐	☐	☐
90.	In unserem Unternehmen wird die kurzfristige Leistung regelmäßig bewertet.	☐	☐	☐	☐	☐	☐	☐
91.	In unserem Unternehmen werden regelmäßig die Fortschritte in Bezug auf die langfristigen Ziele evaluiert.	☐	☐	☐	☐	☐	☐	☐
92.	Bei der Beurteilung meiner Leistung werden auch Informationen von anderen Managerinnen/Managern und mir untergeordneten Mitarbeitenden verwendet.	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über Ihre Person zustimmen oder nicht zustimmen.		stimme überhaupt nicht zu						stimme voll und ganz zu
93.	Ich probiere meine Ideen in der Gruppe aus.	☐	☐	☐	☐	☐	☐	☐
94.	Ich habe Vorschläge, die von meinen Mitarbeitenden unterbreitet werden, in die Tat umgesetzt.	☐	☐	☐	☐	☐	☐	☐
95.	Ich mache meine Standpunkte gegenüber der Gruppe klar.	☐	☐	☐	☐	☐	☐	☐
96.	Ich behandle alle Mitarbeitenden als Meinesgleichen.	☐	☐	☐	☐	☐	☐	☐
97.	Ich kündige Änderungen im Voraus an.	☐	☐	☐	☐	☐	☐	☐
98.	Ich achte auf das persönliche Wohlergehen der Mitarbeitenden.	☐	☐	☐	☐	☐	☐	☐
99.	Ich lasse meine Mitarbeitenden wissen, was von Ihnen erwartet wird.	☐	☐	☐	☐	☐	☐	☐
100.	Ich unterstützte die Verwendung einheitlicher Verfahren.	☐	☐	☐	☐	☐	☐	☐
101.	Ich übertrage den Mitarbeitenden bestimmte Aufgaben.	☐	☐	☐	☐	☐	☐	☐
102.	Ich lege die Arbeiten, die erledigt werden sollen, fest.	☐	☐	☐	☐	☐	☐	☐
103.	Ich erhalte bestimmte Leistungsstandards aufrecht.	☐	☐	☐	☐	☐	☐	☐
104.	Ich bitte die Mitarbeitenden, sich an die üblichen Regeln und Vorschriften zu halten.	☐	☐	☐	☐	☐	☐	☐

Wie häufig treffen die folgenden Aussagen auf Ihre aktuelle Position in Ihrem Unternehmen zu?		nie						immer
105.	Ich muss schnell arbeiten.	☐	☐	☐	☐	☐	☐	☐
106.	Ich habe zu viel Arbeit zu erledigen.	☐	☐	☐	☐	☐	☐	☐
107.	Ich muss Mehrarbeit leisten, um eine Aufgabe zu erledigen.	☐	☐	☐	☐	☐	☐	☐
108.	Ich arbeite unter Zeitdruck.	☐	☐	☐	☐	☐	☐	☐
109.	Ich kann meine Arbeit bequem erledigen.	☐	☐	☐	☐	☐	☐	☐
110.	Ich muss mit Rückständen bei der Arbeit umgehen.	☐	☐	☐	☐	☐	☐	☐
111.	Ich habe Probleme mit dem Arbeitstempo.	☐	☐	☐	☐	☐	☐	☐
112.	Ich habe Probleme mit der Arbeitsbelastung.	☐	☐	☐	☐	☐	☐	☐

Die folgenden Fragen 113 – 118 beziehen sich auf die Budgetierung. Für den Zweck dieser Studie definieren wir ein Budget wie folgt: Ein Budget ist ein kurzfristiger Finanzplan, der typischerweise für ein Jahr gilt und die für dieses Jahr geplanten Einnahmen und Ausgaben angibt. Die Budgets entsprechen der Verantwortungsstruktur eines Unternehmens, sodass die jeweils zuständigen untergeordneten Führungskräfte/Mitarbeitenden (z. B. Kostenstellenleiter) zustimmen, die Verantwortung für die Erreichung der budgetierten Ziele zu übernehmen.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über die Budgetziele in Ihrem Unternehmen zustimmen oder nicht zustimmen.

	stimme überhaupt nicht zu						stimme voll und ganz zu
113. Die Budgetziele sind im Allgemeinen so gesetzt, dass sie recht anspruchsvoll sind.	☐	☐	☐	☐	☐	☐	☐
114. Budgetziele, die trotz sehr hohen Einsatzes und sehr hoher Anstrengung kaum bis gar nicht erreichbar sind (sogenannte „stretch budgets“), sind die Norm.	☐	☐	☐	☐	☐	☐	☐
115. Die im Budget enthaltenen Ziele sind in der Regel schwer zu erreichen.	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit die folgenden Fragen über die Festlegung der Budgetziele in Ihrem Unternehmen zutreffen.

	überhaupt nicht						voll und ganz
116. Inwieweit konnten die jeweils zuständigen untergeordneten Führungskräfte/Mitarbeitenden auf die Festlegung der aktuellen Budgetziele für ihre Verantwortungsbereiche Einfluss nehmen?	☐	☐	☐	☐	☐	☐	☐
117. Inwieweit konnten die jeweils zuständigen untergeordneten Führungskräfte/Mitarbeitenden auf die Festlegung der aktuellen Budgetziele für das gesamte Unternehmen Einfluss nehmen?	☐	☐	☐	☐	☐	☐	☐

118. Im Allgemeinen sind die Budgetziele in Ihrem Unternehmen ...

… leicht zu erreichen.	… mit normalem Aufwand erreichbar.	… mit hohem Aufwand erreichbar.	… mit sehr hohem Aufwand erreichbar.	… praktisch unerreichbar.
☐	☐	☐	☐	☐

Wie hoch sind die folgenden Prioritäten in Ihrem Unternehmen aktuell gewichtet?

	sehr gering						sehr hoch
119. Verbesserung der Effizienz	☐	☐	☐	☐	☐	☐	☐
120. Innovativ sein	☐	☐	☐	☐	☐	☐	☐
121. Anpassung an sich ändernde Geschäftsanforderungen	☐	☐	☐	☐	☐	☐	☐
122. Koordination der Arbeit zwischen Untereinheiten des Unternehmens	☐	☐	☐	☐	☐	☐	☐
123. Ausrichten der Aktivitäten der Mitarbeitenden auf die Unternehmensziele	☐	☐	☐	☐	☐	☐	☐

124. Die Fragen 124 – 130 beziehen sich auf das Enterprise Risk Management (ERM). Für den Zweck dieser Studie definieren wir ERM wie folgt: ERM ist ein Prozess, der von der Leitung des Unternehmens, dem Management und anderem Personal beeinflusst wird. ERM wird bei der Strategieplanung und im gesamten Unternehmen angewendet, um potenzielle Ereignisse zu identifizieren, die sich auf das Unternehmen auswirken können, und diese so zu steuern, dass das Risiko innerhalb der Risikoneigung liegt, um eine angemessene Sicherheit hinsichtlich der Erreichung der Unternehmensziele zu gewährleisten.

Bitte geben Sie den aktuellen Entwicklungsstand Ihres unternehmensweiten Risikomanagementprozess (ERM) an.

(Wenn die Antwort (5) oder (4) ist, fahren Sie bitte mit Frage 125 fort, andernfalls mit Frage 126.)

- (5) ☐ Es ist ein vollständiger formaler unternehmensweiter Risikomanagementprozess implementiert.
- (4) ☐ Es ist teilweise ein unternehmensweiter Risikomanagementprozess implementiert (d. h. einige, aber nicht alle Risikokategorien werden adressiert).
- (3) ☐ Es gibt keinen formalen unternehmensweiten Risikomanagementprozess, aber es ist geplant einen solchen zu implementieren.
- (2) ☐ Derzeit wird ein Konzept des unternehmensweiten Risikomanagements geprüft, es wurde aber noch keine Entscheidung getroffen.
- (1) ☐ Es besteht kein unternehmensweiter Risikomanagementprozess und es gibt keine Pläne zur Umsetzung eines solchen.

125. Bitte geben Sie das Jahr an, in dem Ihr Unternehmen zum ersten Mal einen unternehmensweiten Risikomanagementprozess implementiert hat.

Jahr: ____________

126. Bitte geben Sie an, welche der folgenden Aussagen die aktuelle Phase der Implementierung des unternehmensweiten Risikomanagementprozesses Ihres Unternehmens am besten beschreibt.

- ☐ Unser Prozess ist systematisch, robust und wiederholbar mit regelmäßiger Berichterstattung über Top-Risikopositionen an die Unternehmensleitung.
- ☐ Unser Prozess ist größtenteils informell und unstrukturiert, mit einer Ad-hoc-Berichterstattung der aggregierten Risikopositionen gegenüber der Unternehmensleitung.
- ☐ Wir verfolgen die Risiken größtenteils nach einzelnen Risikokategorien/-silos, aber nur mit einem minimalen Reporting der aggregierten Top-Risikopositionen gegenüber der Unternehmensleitung.
- ☐ Es gibt keinen strukturierten Prozess zur Identifizierung von und Berichterstattung über Risikopositionen gegenüber der Unternehmensleitung.

127. Wie hoch ist der Reifegrad des Risikomanagements Ihres Unternehmens?

Robust	Ausgereift	Sich entfaltend	Sich entwickelnd	Sehr unausgereift
☐	☐	☐	☐	☐

128. Wie würden Sie die Risikokultur in Ihrem Unternehmen beschreiben?

Stark risikofreudig	Risikofreudig	Risikoneutral	Risikoscheu	Stark risikoscheu
☐	☐	☐	☐	☐

129. Hat Ihr Unternehmen eine Person als Chief Risk Officer (CRO) oder ähnliches benannt?

- ☐ Ja, ich bin das.
- ☐ Ja, eine andere Person als mich.
- ☐ Nein.

130. Inwieweit haben Führungskräfte und leitende Angestellte der Kerngeschäftsbereiche in den letzten zwei Jahren Schulungen/Weiterbildungen zum Risikomanagement erhalten?

- ☐ Umfassend
- ☐ Intensiv
- ☐ Etwas
- ☐ Minimal
- ☐ Gar nicht

Wir betrachten das Controllingsystem als die Kombination von Steuerungssystemen und -prozessen, die Ihr Unternehmen nutzt (z. B. Planung, Buchhaltung, Bewertungs-/Prämiensysteme, Struktur, Managementprozesse, Human-Resource-Verfahren, Unternehmenskultur und -richtlinien).

Wie hoch ist der Beitrag Ihres Controllingsystems zur Erreichung der folgenden Prioritäten aktuell?

		sehr gering						sehr hoch
131.	Verbesserung der Effizienz	☐	☐	☐	☐	☐	☐	☐
132.	Innovativ sein	☐	☐	☐	☐	☐	☐	☐
133.	Anpassung an sich ändernde Geschäftsanforderungen	☐	☐	☐	☐	☐	☐	☐
134.	Koordination der Arbeit zwischen Untereinheiten des Unternehmens	☐	☐	☐	☐	☐	☐	☐
135.	Ausrichten der Aktivitäten der Mitarbeitenden auf die Unternehmensziele	☐	☐	☐	☐	☐	☐	☐

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über die Ausrichtung Ihres Unternehmens in den letzten drei Jahren zustimmen oder nicht zustimmen.								
		stimme überhaupt nicht zu						stimme voll und ganz zu
136.	Unser Unternehmen ist ein Unternehmen, das nach neuen technologischen Ideen sucht, indem es über den Tellerrand hinausschaut.							
137.	Unser Unternehmen ist ein Unternehmen, dessen Erfolg auf der Fähigkeit gründet, neue Technologien zu erschließen.							
138.	Unser Unternehmen ist ein Unternehmen, das Produkte und Dienstleistungen entwickelt, die für das Unternehmen innovativ sind.							
139.	Unser Unternehmen ist ein Unternehmen, das nach kreativen Wegen sucht, um die Bedürfnisse der Kunden zu befriedigen.							
140.	Unser Unternehmen ist ein Unternehmen, das aggressiv in neue Marktsegmente vorstößt.							
141.	Unser Unternehmen ist ein Unternehmen, das aktiv neue Kundengruppen anvisiert.							
142.	Unser Unternehmen ist ein Unternehmen, das sich verpflichtet, die Qualität zu verbessern und die Kosten zu senken.							
143.	Unser Unternehmen ist ein Unternehmen, das die Zuverlässigkeit von Produkten und Dienstleistungen kontinuierlich verbessert.							
144.	Unser Unternehmen ist ein Unternehmen, das stetig den Automatisierungsgrad seiner Arbeitsprozesse erhöht.							
145.	Unser Unternehmen ist ein Unternehmen, das fortlaufend die Zufriedenheit seiner Bestandskunden überprüft.							
146.	Unser Unternehmen ist ein Unternehmen, das kontinuierlich sein bestehendes Angebot verbessert, um seine gegenwärtigen Kunden zufriedenzustellen.							
147.	Unser Unternehmen ist ein Unternehmen, das immer mehr den bestehenden Kundenstamm bearbeitet.							

Inwieweit wurden die Befugnisse für die folgenden Kategorien von Entscheidungen an die jeweils zuständigen untergeordneten Führungskräfte/Mitarbeitenden delegiert?								
		überhaupt nicht						voll und ganz
148.	Entwicklung neuer Produkte und Dienstleistungen							
149.	Einstellung und Entlassung von Schlüsselpersonal							
150.	Auswahl großer Investitionen							
151.	Marketingentscheidungen (z. B. Kampagnen, Preisentscheidungen)							
152.	Entscheidungen bezüglich interner Prozesse (z. B. Festlegung von Produktions-/ Verkaufsprioritäten, verwendete Inputs/angewandte Prozesse zur Erfüllung eines Auftrages, Vertragsgestaltung mit Zulieferern)							

Die folgenden beiden Fragen beziehen sich auf Ihre Werte, Fertigkeiten und Fähigkeiten zum heutigen Zeitpunkt.								
		überhaupt nicht						voll und ganz
153.	Zu welchem Grad haben Sie das Gefühl, dass Ihre Werte mit denen Ihres Unternehmens und dessen derzeitigen Mitarbeitenden übereinstimmen?							
154.	Zu welchem Grad haben Sie das Gefühl, dass Ihre Fertigkeiten und Fähigkeiten mit denjenigen übereinstimmen, die für Ihre Tätigkeit benötigt werden?							

Wie hoch waren die folgenden Prioritäten in Ihrem Unternehmen zu dem Zeitpunkt gewichtet, als Sie in dieses eingetreten sind?

		sehr gering						sehr hoch
155.	Verbesserung der Effizienz	☐	☐	☐	☐	☐	☐	☐
156.	Innovativ sein	☐	☐	☐	☐	☐	☐	☐
157.	Anpassung an sich ändernde Geschäftsanforderungen	☐	☐	☐	☐	☐	☐	☐
158.	Koordination der Arbeit zwischen Untereinheiten des Unternehmens	☐	☐	☐	☐	☐	☐	☐
159.	Ausrichten der Aktivitäten der Mitarbeitenden auf die Unternehmensziele	☐	☐	☐	☐	☐	☐	☐

Bitte lesen Sie die folgenden Beschreibungen von zwei Unternehmen. Keiner der beiden Unternehmenstypen ist per se „gut“ oder „schlecht“.

Unternehmen A

- Unternehmen A besetzt in seinem Markt eine „Nische“, indem es eine relativ stabile Palette an Produkten/Dienstleistungen anbietet.
- Im Allgemeinen befindet sich das Unternehmen A nicht an der Spitze bei Marktentwicklungen mit Bezug zu neuen Produkten/Dienstleistungen.
- Unternehmen A neigt dazu, Änderungen zu ignorieren, die keine unmittelbaren Auswirkungen auf aktuelle Tätigkeitsbereiche haben, und konzentriert sich stattdessen darauf, die bestmögliche Leistung in seinem bestehenden Gebiet zu erbringen.

Unternehmen B

- Unternehmen B nimmt relativ häufig Veränderungen (insbesondere Ergänzungen) bei seinen Produkten/Dienstleistungen vor.
- Unternehmen B versucht konsequent in neuen Bereichen der Marktaktivität Pionierarbeit zu leisten, auch wenn sich letztlich nicht alle dieser Anstrengungen als erfolgreich erweisen.
- Unternehmen B reagiert schnell auf frühe Signale von Marktbedürfnissen und Marktchancen.

		Unternehmen A	**Unternehmen B**
160.	Betrachtet man Branchenwettbewerber als Bezugsrahmen und Ihr Unternehmen als Ganzes, welcher Unternehmenstyp beschreibt Ihr Unternehmen **vor drei Jahren** am besten?	☐	☐
161.	Betrachtet man Branchenwettbewerber als Bezugsrahmen und Ihr Unternehmen als Ganzes, welcher Unternehmenstyp beschreibt ihr Unternehmen **im Moment** am besten?	☐	☐

Wie vorhersehbar sind die folgenden Faktoren im Umfeld Ihres Unternehmens?

		sehr unvorher-sehbar						sehr vorher-sehbar
162.	Handlungen und Verhalten der Konkurrenten	☐	☐	☐	☐	☐	☐	☐
163.	Kundenverhalten und Kundenpräferenzen	☐	☐	☐	☐	☐	☐	☐
164.	Handlungen und Verhalten Ihrer Lieferanten	☐	☐	☐	☐	☐	☐	☐

Wir möchten die Art und Weise verstehen, wie Informationen innerhalb Ihres Unternehmens zwischen dem Top-Management-Team und den jeweils zuständigen untergeordneten Führungskräften/Mitarbeitenden weitergegeben werden. Wer verfügt über bessere Informationen, um die folgenden Dimensionen beurteilen zu können?

		Das Top-Management-Team						Die jeweils zuständigen untergeordneten Führungs-kräfte/Mitar-beitenden
165.	Wer verfügt über bessere Informationen über die Aktivitäten in Ihrem Unternehmen?	☐	☐	☐	☐	☐	☐	☐
166.	Wer verfügt über bessere Informationen über die Input-Output-Beziehungen, die den internen Abläufen Ihres Unternehmens innewohnen?	☐	☐	☐	☐	☐	☐	☐
167.	Wer verfügt über bessere Informationen über das Leistungspotenzial Ihres Unternehmens?	☐	☐	☐	☐	☐	☐	☐
168.	Wer verfügt über bessere technische Informationen über die Arbeit Ihres Unternehmens?	☐	☐	☐	☐	☐	☐	☐
169.	Wer verfügt über bessere Informationen über die potenziellen Auswirkungen von Faktoren außerhalb Ihres Unternehmens auf Ihre Aktivitäten?	☐	☐	☐	☐	☐	☐	☐
170.	Wer verfügt über bessere Informationen darüber, was in Ihrem Unternehmen erreicht werden kann?	☐	☐	☐	☐	☐	☐	☐

Zur Erinnerung: Wir betrachten das Controllingsystem als die Kombination von Steuerungssystemen und -prozessen, die Ihr Unternehmen nutzt (z. B. Planung, Buchhaltung, Bewertungs-/Prämiensysteme, Struktur, Managementprozesse, Human-Resource-Verfahren, Unternehmenskultur und -richtlinien).

Wie hoch war der Beitrag Ihres Controllingsystems zur Erreichung der folgenden Prioritäten bei Ihrem Eintritt in das Unternehmen?

		sehr gering						sehr hoch
171.	Verbesserung der Effizienz	☐	☐	☐	☐	☐	☐	☐
172.	Innovativ sein	☐	☐	☐	☐	☐	☐	☐
173.	Anpassung an sich ändernde Geschäftsanforderungen	☐	☐	☐	☐	☐	☐	☐
174.	Koordination der Arbeit zwischen Untereinheiten des Unternehmens	☐	☐	☐	☐	☐	☐	☐
175.	Ausrichten der Aktivitäten der Mitarbeitenden auf die Unternehmensziele	☐	☐	☐	☐	☐	☐	☐

Bitte beantworten Sie die folgenden Fragen zur Balanced Scorecard.

Die Balanced Scorecard (BSC) übersetzt die Mission und Strategie eines Unternehmens in ein umfassendes Paket von Leistungskennzahlen, das den Rahmen für ein strategisches Mess- und Managementsystem bereitstellt. Die Balanced Scorecard konzentriert sich darüber hinaus auf die Erreichung finanzieller Ziele, umfasst aber auch die (nicht-finanziellen) Leistungstreiber dieser finanziellen Ziele. Die Balanced Scorecard misst häufig die organisatorische Leistung in vier ausgewogenen Perspektiven: Finanzen, Kunden, interne Geschäftsprozesse sowie Lernen und Wachstum.

		Ja	Nein
176.	Hat sich Ihr Unternehmen bereits in irgendeiner Form mit dem Konzept der Balanced Scorecard beschäftigt?	☐ *(Bitte fahren Sie fort mit Frage 177.)*	☐ *(Bitte fahren Sie fort mit Frage 195.)*
177.	Ist derzeit eine Balanced Scorecard in Ihrem Unternehmen implementiert?	☐ *(Bitte fahren Sie fort mit Frage 178.)*	☐ *(Bitte fahren Sie fort mit Frage 191.)*

Bitte bewerten Sie, inwieweit die Balanced Scorecard in Ihrem Unternehmen verwendet wird.

		überhaupt nicht						in hohem Maße
178.	Umfang der Nutzung auf der Managementebene	☐	☐	☐	☐	☐	☐	☐
179.	Umfang der Nutzung auf der Mitarbeitendenebene	☐	☐	☐	☐	☐	☐	☐

180. Welche Perspektiven sind in der Balanced Scorecard auf der Managementebene enthalten? *(Mehrfachnennungen möglich.)*

- ☐ Finanzen
- ☐ Prozesse
- ☐ Kunden
- ☐ Lernen und Entwicklung
- ☐ Eigentümerfamilie
- ☐ Weitere/Andere: ____________

Bitte bewerten Sie, inwieweit die folgenden Perspektiven in der Balanced Scorecard aktiv auf der Managementebene verwendet werden.

		überhaupt nicht						in hohem Maße
181.	Finanzen	☐	☐	☐	☐	☐	☐	☐
182.	Prozesse	☐	☐	☐	☐	☐	☐	☐
183.	Kunden	☐	☐	☐	☐	☐	☐	☐
184.	Lernen und Entwicklung	☐	☐	☐	☐	☐	☐	☐
185.	Eigentümerfamilie	☐	☐	☐	☐	☐	☐	☐
186.	Weitere/Andere: ____________	☐	☐	☐	☐	☐	☐	☐

187. Was umfasst die am weitesten entwickelte Balanced Scorecard in Ihrem Unternehmen? *(Mehrfachnennungen möglich.)*

- ☐ Strategische Ziele.
- ☐ Messgrößen/Kennzahlen.
- ☐ Zielvorgaben für die Messgrößen.
- ☐ Ursache-Wirkungsbeziehungen zwischen den Perspektiven.
- ☐ Ursache-Wirkungsbeziehungen zwischen den Messgrößen.
- ☐ Aktionspläne für die einzelnen Ziele.

188. Wird die Balanced Scorecard auf Managementebene zur Leistungs- und Erfolgsbewertung verwendet?

- ☐ Ja, mit direkt verknüpften Anreizen.
- ☐ Ja, ohne direkt verknüpfte Anreize.
- ☐ Nein.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zur Verknüpfung der in der Balanced Scorecard enthaltenen Daten mit der Vergütung zustimmen oder nicht zustimmen.

		stimme überhaupt nicht zu						stimme voll und ganz zu
189.	Finanzielle Daten werden für die Vergütung des Managements verwendet.	☐	☐	☐	☐	☐	☐	☐
190.	Nicht-finanzielle Daten werden für die Vergütung des Managements verwendet.	☐	☐	☐	☐	☐	☐	☐

191. Bitte tragen Sie jeweils das Kalenderjahr der folgenden Ereignisse aus Sicht Ihres Unternehmens ein. Sofern einzelne Ereignisse in Ihrem Unternehmen nie stattgefunden haben, lassen Sie die Jahresangaben für diese Ereignisse bitte frei.

	Kalenderjahr
… Erster Kontakt mit dem Konzept der BSC:	
… Erste nähere Betrachtung der BSC:	
… Entscheidung über die Weiterverfolgung der BSC:	
… Beginn des Aufbaus der ersten BSC:	
… Fertigstellung der ersten BSC:	
… Beginn der Implementierung der ersten BSC:	
… Fertigstellung der Implementierung der ersten BSC:	
… Aufgabe der BSC:	

Hinweis: Die Fragen 192 bis 194 richten sich nur an Familienunternehmen, die die Balanced Scorecard eingeführt haben, d. h. diese Fragen sollten nur beantwortet werden, wenn Frage 27 und 177 jeweils mit „Ja" beantwortet worden sind.

192. Wie viele Ziele, die sich auf die Eigentümerfamilie oder die Eigentümer beziehen (z. B. Familienziele) sind in der Balanced Scorecard auf der Managementebene enthalten?

	0	1	2	3	4	> 4
(Wenn die Antwort (0) ist, fahren Sie bitte mit Frage 195 fort, andernfalls mit Frage 193.)	☐	☐	☐	☐	☐	☐

193. Bitte geben Sie das Jahr an, in dem die ersten familienbezogenen Ziele Teil Ihrer Balanced Scorecard auf Managementebene wurden.

Jahr: ____________

194. Welche der folgenden Familienziele sind in Ihrer Balanced Scorecard auf Managementebene enthalten. *(Mehrfachnennungen möglich.)*

- ☐ Die finanzielle Sicherheit von Familienmitgliedern zu wahren.
- Die Werte der Familie allen Mitarbeitenden einzuimpfen.
- ☐ Von unseren Kunden als Familienunternehmen wahrgenommen zu werden.
- ☐ Alle Familienmitglieder dazu zu ermuntern, sich an der Entscheidungsfindung zu beteiligen.
- ☐ Den nachfolgenden Familiengenerationen zu ermöglichen, das Geschäft unseres Unternehmens zu erlernen.
- ☐ Andere: ____________

Die folgenden beiden Fragen beziehen sich auf Ihre Werte, Fertigkeiten und Fähigkeiten zum Zeitpunkt Ihres Eintritts in das Unternehmen.

		überhaupt nicht						voll und ganz
195.	Zu welchem Grad hatten Sie zum Zeitpunkt, als Sie in das Unternehmen eingetreten sind, das Gefühl, dass Ihre Fertigkeiten und Fähigkeiten mit denjenigen übereinstimmten, die Sie für Ihre Tätigkeit benötigten?	☐	☐	☐	☐	☐	☐	☐
196.	Zu welchem Grad hatten Sie zum Zeitpunkt, als Sie in das Unternehmen eingetreten sind, das Gefühl, dass Ihre Werte mit denen Ihres Unternehmens und dessen damaligen Mitarbeitenden übereinstimmten?	☐	☐	☐	☐	☐	☐	☐

Wie bewerten Sie die Leistung Ihres Unternehmens in den letzten 3 Jahren im Vergleich zu Ihren Wettbewerbern in Bezug auf die folgenden Leistungsindikatoren?

		niedriger als die der Wettbewerber						höher als die der Wettbewerber
197.	Umsatzwachstum	☐	☐	☐	☐	☐	☐	☐
198.	Wachstum der Marktanteile	☐	☐	☐	☐	☐	☐	☐
199.	Wachstum der Zahl der Mitarbeitenden	☐	☐	☐	☐	☐	☐	☐
200.	Steigerung der Rentabilität	☐	☐	☐	☐	☐	☐	☐
201.	Eigenkapitalrendite	☐	☐	☐	☐	☐	☐	☐
202.	Gesamtkapitalrendite	☐	☐	☐	☐	☐	☐	☐
203.	Gewinnspanne beim Umsatz	☐	☐	☐	☐	☐	☐	☐
204.	Fähigkeit, aus Gewinnen Wachstum zu generieren	☐	☐	☐	☐	☐	☐	☐

Hinweis: Die folgenden Fragen 205 bis 213 richten sich nur an Familienunternehmen, das heißt, die folgenden Fragen sollten nur beantwortet werden, wenn Frage 27 mit „Ja“ beantwortet wurde.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen über Ihr Unternehmen zustimmen oder nicht zustimmen.

		stimme überhaupt nicht zu						stimme voll und ganz zu
205.	In unserem Familienunternehmen ist es ein wichtiges Ziel, das Familienvermächtnis und die Familientradition fortzuführen.	☐	☐	☐	☐	☐	☐	☐
206.	In unserem Familienunternehmen bewerten Familieneigentümer ihre Investition weniger oft auf kurzfristiger Basis.	☐	☐	☐	☐	☐	☐	☐
207.	In unserem Familienunternehmen ist die erfolgreiche Unternehmensübergabe an die nächste Generation ein wichtiges Ziel.	☐	☐	☐	☐	☐	☐	☐
208.	In unserem Familienunternehmen sind die emotionalen Bindungen zwischen Familienmitgliedern sehr hoch.	☐	☐	☐	☐	☐	☐	☐
209.	In unserem Familienunternehmen helfen uns starke emotionale Bindungen zwischen Familienmitgliedern ein positives Selbstverständnis aufrecht zu erhalten.	☐	☐	☐	☐	☐	☐	☐
210.	In unserem Familienunternehmen sind die Familienmitglieder herzlich miteinander verbunden.	☐	☐	☐	☐	☐	☐	☐
211.	In unserem Familienunternehmen haben die Familienmitglieder ein starkes Zugehörigkeitsgefühl zum Unternehmen.	☐	☐	☐	☐	☐	☐	☐
212.	In unserem Familienunternehmen hat das Unternehmen große persönliche Bedeutung für die Familienmitglieder.	☐	☐	☐	☐	☐	☐	☐
213.	In unserem Familienunternehmen definieren sich Familienmitglieder über die Mitarbeit im Unternehmen.	☐	☐	☐	☐	☐	☐	☐

Vielen Dank für Ihre Unterstützung!