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Psychological ownership and stewardship behavior: The moderating role of agency culture

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A R T I C L E I N F O

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A B S T R A C T

This study investigates whether employees' psychological ownership results in stewardship behavior and whether this relationship is affected by an employee's perception of the organization's agency culture. A survey of the financial managers of 129 firms in Germany generally confirms these expectations. In addition, and surprisingly, our findings suggest a negligible effect of an agency culture on the relationship between psychological ownership and stewardship behavior when managers perceive high psychological ownership. Thereby, our study enriches the literature on the consequences of psychological ownership by providing insights into the boundary conditions of such outcomes at the manager level.

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, Schoorman, & Donaldson, 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, Tian, Newman, & Martin, 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, Zellweger, & Aquino, 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, Kostova, & Dirks, (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, Voordeckers, Lambrechts, & Koiranen, 2014). These and other pro-organizational attitudes, behaviors and individual-level outcomes determined by psychological ownership (for overviews, see Dawkins et al., 2017; Zhang, Liu, Xu, & Cheung, 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, van Zyl, & van der Vaart, (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, Backs, & Hoon, 2021; Davis et al., 1997; Davis, Allen, & Hayes, 2010; Henssen and

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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 (Wasserman, 2006; Miller and Le Breton-Miller, 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, Lopez-de-Silanes, & Shleifer, 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, Núñez-Cacho, Akhter, & Chirico, 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, Holt, Kellermanns, & Ranft, 2016; Madison, Kellermanns, & Munyon, 2017). 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, Chua, Kellermans, and Chang (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.

2. Theoretical foundations

2.1. Psychological ownership

Following the above definition by Pierce, Kostova, and Dirks (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., 2001, 2003). 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, Parker, & Christiansen, 2003; for an overview, see Dawkins et al., 2017). Following Wagner et al. (2003) and O'Driscoll, Pierce, and Coghlan (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, Thomas, Dibrell, & Craig, 2017). If employees develop psychological ownership toward their organization, this psychological connection can result in positive work-related attitudes and behavior (Ramos, Man, Mustafa, & Ng, 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'Discroll, 2011; Mayhew, Ashkanasv, Bramble, & Gardener, 2007; Pierce et al., 2001, 2003; 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'Discroll, 2011; Liu, Wang, Hui, & Lee, 2012; Mayhew et al., 2007; Peng and Pierce, 2015; Van Dyne and Pierce, 2004), job satisfaction (cf. Avey, Avolio, Crossley, & Luthans, 2009; Avey, Wernsing, & Palanski, 2012; Bernhard and O'Discroll, 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'Discroll (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, Chiang, & Chang, 2010) and burnout experiences (Kaur, Sambasivan, & Kumar, 2013).

These examples underpin the general observation made by Zhang et al. (2021), Dawkins et al. (2017) and Brown, Crossley, and Robinson (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.

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, Hiebl, Moores, & Craig, 2018).[1]

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, Mallén-Broch, Lapiedra-Alcami, & Chiva-Gomez, 2019; Hernandez, 2012; Wasserman, 2006). The latter,

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

which is rooted in rationality, assumes managers to be self-serving individuals, rationally seeking to maximize their individual utility (Corbetta and Salato, 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 Salato, 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, 2008, 2012; Vallejo, 2009). For such managers, it is essential "to do a good job [and] to be a good steward of the corporate 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, Frankforter, & Vollrath, 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 organizations' 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).

3. Hypotheses development

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, Kirk, Luangrath, and Shu (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.

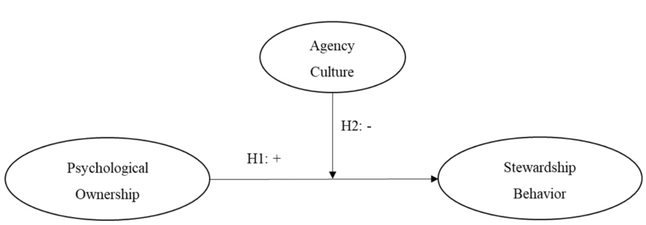

Fig. 1. Theoretical model.

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 Salato (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 Salato, 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.

Fig. 1 summarizes our theoretical model.

4. Methods

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 (Dalton, Hitt, Certo, & Dalton, 2007; Bendickson, Muldoon, Liguori, & Davis, 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, Ghauri, Yeniyurt, & Cavusgil, 2015; Dillman, Smyth, & Christian, 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, Young, and Chen (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, Malmu, and Sandelin (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, MacKenzie, Lee, and Podsakoff (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).

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.

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".[2] 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 Table A1 for the details). Following Hair, Black, Babin, and Anderson (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, 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.

[2] 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).

4.2.2. Independent variables

Psychological ownership. To measure psychological ownership, we relied on the seven-item instrument originally developed by Pierce, O'Driscoll, and Coghlan (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 Table A1). 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 Table A1). 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).

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, Chrisman, & Sharma, 1999; Steiger, Duller, & Hiebl, 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

Table 1
Descriptive statistics.

Variable		N	Mean	Median	SD	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	1.00	0.434	0.000	1.000
6.	Tenure	129	12.308	10.000	9.9234	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	0.000	1.000
9.	Firm size	129	267.570	113.000	420.169	26.000	2639.000
10.	Data collection	129	0.209	0.000	0.408	0.000	1.000

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 respondents' 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, Matejka, Merchant, & Van der Stede, 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.

5. Results

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 1 displays further descriptive statistics on the variables included in our study, while Table 2 presents the correlations between these variables.

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 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 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 dichotomous variable; Phi values are used for the correlations between two dichotomous variables.

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

Table 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
Sex	-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: $p < 0.1$,
** $p < 0.05$,
*** $p < 0.01$

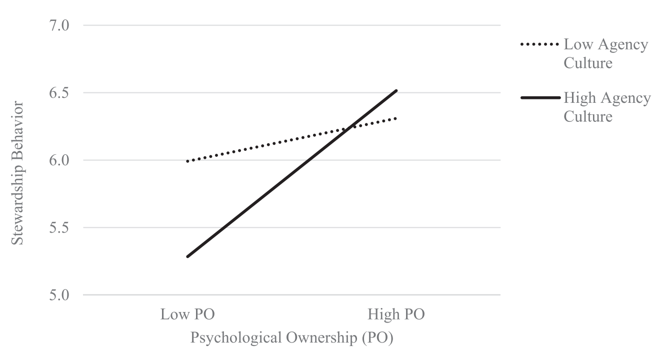

Fig. 2. Interaction plot of psychological ownership and perceived agency culture on stewardship behavior.

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, Lubatkin, Dino, & Buchholtz, 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 Fig. 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.

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 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 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 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 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.

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.

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.

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, Ikäheimonen, & Pihkala, 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.

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 Salato, 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.

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CRediT authorship contribution statement

Sina K. Feldermann: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization, Project administration. **Martin R.W. Hiebl:** Conceptualization, Resources, Writing – review & editing, Supervision, Project administration, Funding acquisition.

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Appendix

See Table A1

Table A1
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

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