Contextualizing Deliberate Learning from Acquisitions: The Role of Organizational and Target Contexts

Abstract

Organizational and target contexts are antecedents of deliberate learning from mergers and acquisitions. We consider strategic orientations (market vs. entrepreneurial orientation) of firms as important organizational contexts driving knowledge codification behavior. Further, we argue that the similarity of target context ("in the market" vs. "out of the market") is an important contingency factor in this relationship. The hypotheses of this study are tested using survey data from 115 acquirers in manufacturing industries from Austria, Germany, and Switzerland. The results provide insights into organizational learning mechanisms from previous acquisition activities. Entrepreneurial and market-oriented firms differ concerning their codification behavior. Market-oriented firms generally engage more in knowledge codification. Further, although market-oriented acquirers focus on knowledge codification from similar contexts ("in the market" targets), entrepreneurial-oriented acquirers focus on knowledge codification from heterogeneous contexts ("out of the market" targets). The results are discussed in-depth and theoretical and managerial implications are derived.

Keywords: Acquisition Experience, Deliberate Learning, Knowledge Codification, Entrepreneurial Orientation, Market Orientation, M&A

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1. Introduction

Learning from past mergers and acquisitions (M&A) has been considered an important antecedent of acquisition performance (Dao & Strobl, 2019; Pereira, Temouri, Budhwar, & Tarba, 2021; Schriber & Degischer, 2020). Acquisition experience enables firms to derive valuable "lessons learned" to enhance target identification (Hitt, Harrison, Ireland, & Best, 1998) and integration (Nikandrou & Papalexandris, 2007). Hence, successful learning from experience occurs when acquirers develop dynamic capabilities that enable them to manage the acquisition process and create value (Zollo & Singh, 2004; Zollo & Winter, 2002).

However, experience spillover effects from one acquisition to the next do not simply materialize without any further ado (Zollo & Reuer, 2010). Different emergent and deliberate learning mechanisms that build on each other are at play (Zollo & Winter, 2002). Initially, the accumulation of acquisition experience results in the emergence of stable behavioral patterns in the form of routines used for managing acquisitions. Subsequently, these acquisition capabilities are enhanced through deliberate learning mechanisms that explicitly aim to understand causal linkages through cognitive efforts (Zollo & Singh, 2004; Zollo & Winter, 2002). These efforts constitute an organizational memory and ultimately yield beneficial M&A performance (Oldroyd, Morris, & Dotson, 2019; Zollo, 2009; Zollo & Winter, 2002). Deliberate learning refers to "cognitive processes having to do with the articulation and codification of collective knowledge" (Zollo & Winter, 2002, p. 340). Paradoxically, research showed that firms with deliberate learning mechanisms in place can benefit (Zollo & Singh, 2004) but might also suffer from them (Heimeriks, Schijven, & Gates, 2012).

Gaining an understanding of what actually drives deliberate learning activities from

acquisitions—a question that has been neglected to date (Schijven, Kolev, & Haleblian, 2021)—is needed to shed light on ambiguous performance effects stemming from acquisition-related deliberate learning (Oldroyd et al., 2019; Zollo, 2009). M&A activities are arguably not isolated events but embedded in various contexts that shape acquisition management (Rouzies, Colman, & Angwin, 2019) and, consequently, emergent and deliberate learning. Recently, research began to investigate different contextual aspects shaping outcomes of acquisition activities. As such, target contexts (e.g., targets of similar sizes or qualities (Ellis, Reus, Lamont, & Ranft, 2011; Zollo, 2009)) or acquirers' organizational contexts (e.g., acquirers with a dedicated M&A function (Trichterborn, Zu Knyphausen-Aufseß, & Schweizer, 2016)) have been highlighted to play a role. Whereas research shows that these contexts shape the performance effects of accumulated acquisition experience (e.g., Basuil & Datta, 2015; Ellis et al., 2011), how organizational and target contexts shape organizational learning, particularly deliberate learning mechanisms, remains unclear.

This research addresses this gap and investigates how the interplay of organizational and target contexts adds to the understanding of how firms employ knowledge codification mechanisms. This study focuses on knowledge codification to capture deliberate learning because codification goes beyond the mere articulation of knowledge, requires higher cognitive effort, and constitutes an important "supporting mechanism for the entire knowledge evolution process" related to the development of dynamic capabilities (Zollo & Winter, 2002, p. 342). Simply put, firms develop idiosyncratic knowledge codification behaviors based on their organizational contexts and specific experiences with different target contexts. Specifically, the strategic orientation of an acquirer is arguably (Argote & Miron-Spektor, 2011; Ellis, 2006) closely intertwined with learning behavior (Pérez-Luño, Saparito, & Gopalakrishnan, 2016) and, thus, constitutes an important element of the organizational context and knowledge generation (Li, Wei, & Liu, 2010). We focus on market (MO) and entrepreneurial orientation

(EO) as important antecedents of deliberate learning (Argote & Miron-Spektor, 2011; Cohendet & Meyer-Krahmer, 2001; Pérez-Luño et al., 2016) because they are associated with two distinct organizational learning styles—exploitative and exploratory learning—which are crucial strategic choices for sustained competitive advantage (Atuahene-Gima & Ko, 2001).

The degree of similarity has been highlighted as an important target contextual factor shaping deliberate learning from acquisitions (Haleblian & Finkelstein, 1999; Kim & Finkelstein, 2009; Zollo, 2009). "In the market" and "out of the market" acquisitions are argued to display distinct but important target contexts that shape deliberate learning. On the one hand, "in the market" acquisitions contain familiar settings in which the target's business model and the competitive landscape are familiar to the acquirer, allowing them to leverage a target's existing resources and capabilities (Kim & Finkelstein, 2009). On the other hand, "out of the market" acquisitions contain less familiarity with the target's business model and the respective environment but offer acquirers the opportunity to redeploy resources, discover a broader range of opportunities, or develop new competencies (Bauer & Matzler, 2014; Kim & Finkelstein, 2009). Consequentially, acquisition experience stemming from different target contexts ("in" vs. "out of the market") is claimed to shape the influence of strategic (market vs. entrepreneurial) orientations on knowledge codification.

This research makes three major contributions. First, a direct performance link of prior acquisition activity does not sufficiently reflect intentions behind such moves (Hayward, 2002) and neglects that performance variance might stem from additional factors (King, Dalton, Daily, & Covin, 2004). However, research providing insights into the antecedents of acquisition performance is scarce (Schijven et al., 2021). Thus, this study contributes to the literature on knowledge codification from M&A activity (e.g., Echajari & Thomas, 2015; Heimeriks, Bingham, & Laamanen, 2015) by investigating how contextual factors shape this important antecedent of M&A performance. In doing so, this study also contributes to recent

debates about the context of organizational knowledge (Gonzalez & de Melo, 2018; Úbeda-García, Claver-Cortés, Marco-Lajara, & Zaragoza-Sáez, 2020).

Second, firms are heterogeneous because of path-dependent choices. Managers follow a dominant logic, which is "the way in which managers conceptualize the business and make critical resource allocation decisions" (Prahalad & Bettis, 1986, p. 490). In turn, this logic determines a firm's behavior (Harrison, Hitt, Hoskisson, & Ireland, 2001) and becomes evident in its strategic orientation. Consequently, assuming that all firms have similar knowledge structures and "a set of elicited management processes" (Prahalad & Bettis, 1986, p. 490) or engage similarly in knowledge codification is an oversimplification. This study's focus on strategic orientations complements the research on knowledge acquisition that focuses on, for example, specific human resource management practices or employee retention (Papa, Dezi, Gregori, Mueller, & Miglietta, 2020). The experience performance relationship is determined by how firms treat experiences or simply the organizational context (Haleblian & Finkelstein, 1999). Hence, this study argues that organizational context is a decisive factor for knowledge codification. The results show that market-oriented firms behave differently and engage stronger in knowledge codification because of their acquisition experience.

Third, the type of acquisition experience offers additional insights (Capron & Guillén, 2009; Echajari & Thomas, 2015; Kim & Finkelstein, 2009; Zollo, 2009) into deliberate learning. Although some researchers identified beneficial effects of undertaking related acquisitions (Porter, 1996; Ravenscraft & Scherer, 1987), others proclaimed an evolutionary approach related to experimentation (Brown & Eisenhardt, 1997; Hayward, 2002). Nonetheless, these approaches require different skill sets that are determined by the organizational context (Kim & Finkelstein, 2009). The results of this study show that the context of acquisition experience is of great importance for explaining knowledge codification efforts. Although market-oriented acquirers focus on knowledge codification from "in the market" acquisitions, entrepreneurial-

oriented acquirers focus on knowledge codification from "out of the market" acquisitions. Thus, this study shows how acquisition experience from different target contexts shapes deliberate learning in different organizational contexts.

This paper proceeds as follows. First, the relevant literature is reviewed, and hypotheses are developed. Second, the hypotheses are tested using survey data from 115 acquirers from central Europe. Finally, theoretical and practical conclusions and avenues for future research are derived.

2. Theory and Hypotheses

2.1 Deliberate learning mechanisms in M&A activity

A widespread underlying assumption of the extant research on acquisition learning is that repetitions of similar processes, such as M&A activities, trigger some form of learning within the acquiring firm (Barkema & Schijven, 2008a). Even though not all transactions are alike (Bower, 2001), and M&A activity might yield heterogeneous experiences (Echajari & Thomas, 2015; Zollo, 2009), certain tasks are generalizable and transferable (Chatterjee, 2009). Accordingly, scholars gauged experience by counting the number of repetitions of a task and pointed at performance variations (Hayward, 2002; Kale & Singh, 2007). These studies attempted to explain whether an increasing number of similar actions result in increased performance through feedback loops (Barkema & Schijven, 2008b; Heimeriks, 2010).

Although M&A activity occurs with certain regularity, especially in acquisition programs (Laamanen & Keil, 2008), companies frequently fail to draw direct links between decisions and outcomes resulting in causal ambiguity (Cording, Christmann, & King, 2008), thus blurring managers' sight of things (Zollo, 2009). Therefore, in line with previous research, M&A activity is conceptualized as complex processes entailing difficulties when attempting to unravel cause-effect relationships between decisions and performance (Zollo, 2009; Zollo &

Winter, 2002). Hence, learning from M&A activities is a challenge for organizations and carries the risk of pitfalls, such as cognitive biases (Heimeriks, 2010; Martin & Davis, 2010), superstitious learning (Zollo, 2009), or knowledge misapplication (Barkema & Schijven, 2008a; Haleblian & Finkelstein, 1999).

However, the literature on organizational learning suggests that experience is not a unidimensional concept. For instance, "the categorization of knowledge into tacit and explicit has become a cornerstone in the literature on learning and knowledge management" (Becerra, Lunnan, & Huemer, 2008, p. 692). In an M&A context, scholars focused on the explicit dimension of experience, namely, deliberate learning efforts, in terms of articulating and codifying M&A experiences (Zollo & Singh, 2004). Deliberate learning tools can help managers to better address the inherent complexity of M&A processes and strategic decision heterogeneity (Heimeriks, 2010; Zollo, 2009). Benefitting from previous acquisitions "requires activating mechanisms of extraction, accumulation, and creation of new organizational knowledge" (Echajari & Thomas, 2015, p. 973). Proactively preserving and nurturing organizational knowledge resources is crucial for sustaining competitiveness and fostering innovation (Caputo, 2017; Caputo, Soto-Acosta, Chiacchierini, Mazzoleni, & Passaro, 2021; Scuotto, Del Giudice, Bresciani, & Meissner, 2017). Deliberate learning triggers an evolution of M&A-related capabilities, which is an important cognitive organizational means to overcome problems facing managers during M&A processes (Pereira, Mellahi, Temouri, Patnaik, & Roohanifar, 2019; Zollo & Singh, 2004; Zollo & Winter, 2002). Thus, deliberate learning is associated with positive M&A performance (Heimeriks et al., 2012; Zollo, 2009; Zollo & Singh, 2004). Consequently, this research investigates knowledge codification triggered through M&A activity. Knowledge codification is informed by abstraction because it "enables the underlying structure (i.e. the "know-why") of the phenomena to be represented; using abstract codes extends their applicability to different contexts and thus facilitates the

reuse of codified knowledge in changing conditions" (Echajari & Thomas, 2015, p. 980).

2.2 Organizational context – strategic orientations

Firms follow different strategic orientations that shape and direct their activities and behavior (Hakala, 2011). As such, they constitute cognitive schemas that determine the identification and exploitation of opportunities, such as acquisitions (Eggers & Kaplan, 2013; Reger & Huff, 1993). Investigating such cognitive schemas has been highlighted as being crucial to understanding company performance (Caputo, 2021; Caputo, Carrubbo, & Sarno, 2018). These cognitive schemas underlying different strategic logic are stored in structures and processes (Caputo, 2021; Eggers & Kaplan, 2013; Murtha, Lenway, & Bagozzi, 1998; Prahalad & Bettis, 1986) that determine activities such as deliberate learning. Thus, firms do not codify alike. Companies' strategic orientations "shape the way organizational members process information and react to the environment through the nature of control systems and rewards they engender" (Atuahene-Gima & Ko, 2001, p. 55), as well as how they conceptualize the business and resource allocation patterns (Prahalad & Bettis, 1986). Therefore, strategic orientations are defined as "social learning and selection mechanisms that aim to maintain a coherence between management's strategic intent and operational activities" (Atuahene-Gima & Ko, 2001, p. 55). As such, strategic orientations determine what, when, and how companies learn (Li et al., 2010) and, consequently, the extent to which different learning mechanisms such as deliberate learning are applied.

Research provides evidence that companies must align MO and EO to achieve sustainable development and success (Atuahene-Gima & Ko, 2001; Ellis, 2006; Slater & Narver, 1995). The need to align these two organizational orientations stems from the circumstance that they are associated with two complementing ways of organizational learning (Li et al., 2010). EO refers to generative learning, "a learning and selection mechanism that engenders exploratory,

risk-seeking behaviors," and MO "mirrors adaptive learning, whereby the firm identifies environmental changes and responds to them through previously held assumptions about customers and the competition" (Atuahene-Gima & Ko, 2001, p. 56). As such, MO is closely associated with exploitation, and EO is associated with exploration. Exploitation and exploration capabilities complement and reinforce each other. Whereas "proficiency in a firm's exploitative processes will better equip it to recognize and assimilate new external knowledge and resources," explorative processes enable companies to apply their exploitation capabilities to a "larger pool of competencies, so that efficient routines and processes can be applied on a greater scale" (Cao, Gedajlovic, & Zhang, 2009, p. 784). However, although aligning these strategic orientations drives competitive sustainability, they rely on distinct cognitive processes (O'Reilly & Tushman, 2008), possibly triggering cognitive distance and information asymmetries and impacting knowledge sharing in an organization, which impedes the realization of competitive sustainability (Caputo, 2021; Caputo & Evangelista, 2019). This phenomenon is especially important in an M&A context because companies "acquiring or sourcing external knowledge might provoke many internal tensions" (Papa et al., 2020, p. 590). Thus, investigating how EO and MO lead to dissimilar efforts of deliberate learning from M&A is expected to yield valuable insights into the foundations of how firms can align these strategic postures.

2.2.1 Market orientation and knowledge codification

According to Kohli and Jaworski (1990, p. 3), "market orientation refers to the organization wide generation, dissemination, and responsiveness to market intelligence." Thus, market-oriented companies monitor their customers and the competitive environment and translate changing customer needs into new products and services. Market-oriented firms can be described as formalized and performance-oriented organizations (Gebhardt, Carpenter, & Sherry Jr., 2006) that follow deliberate strategies (Narver, Slater, & Tietje, 1998) that are

effective ways to engage employees organization-wide in the dissemination of knowledge (Chen, Baptista Nunes, Ragsdell, & An, 2018). Consequently, MO is associated with incremental innovation (Baker & Sinkula, 2009) and adaptive learning (Slater & Narver, 1995). Adaptive learning is bound by an organizational framework that "constrains organizational learning to the adaptive variety, which usually is sequential, incremental, and focused on issues or opportunities that are within the traditional scope of the organization's activities" (Slater & Narver, 1995, p. 65). Jiménez-Jiménez and Cegarra-Navarro (2007) showed that companies must employ a learning orientation to transfer MO into performance. More specifically, companies must develop a market-based organizational learning capability that is based on "values that promote learning, market-information processing behaviours and actions" (Malik, Sinha, Pereira, & Rowley, 2019, p. 560). Such a market-based organizational learning capability is created through suitable business processes and investments in deliberate learning, such as quality management processes, training, and knowledge accumulation and articulation (Abdulkader, Magni, Cillo, Papa, & Micera, 2020; Malik et al., 2019; Pereira et al., 2019). By doing so, market-oriented firms exhibit a high level of internal proactive knowledge sharing (Gebhardt et al., 2006; Keskin, 2006) and provide a commitment to learning (Keskin, 2006) that refers to the systematic codification of the knowledge needed for deliberate learning in M&A activities (Zollo, 2009).

Kohli and Jaworski (1990, p. 4) stated that MO "entails (1) one or more departments engaging in activities geared toward developing an understanding of customers' current and future needs and the factors affecting them, (2) sharing of this understanding across departments, and (3) the various departments engaging in activities designed to meet select customer needs." Consequently, market-oriented companies create value by utilizing knowledge about customers, competitors, and markets (Hakala, 2011) and spread knowledge made explicit within the company in a formalized manner (Cohendet & Meyer-Krahmer, 2001; Ellis et al.,

2011; Jansen, Bosch, & Volberda, 2006). These companies do so through constant investments in quality and knowledge management such as training and process development related to a systematic articulation and codification of knowledge (Jansen et al., 2006; Malik et al., 2019; Pereira et al., 2019). Thus, MO is expected to trigger the deliberate learning and knowledge codification of experiences gained during previous M&A activities to better meet their needs to understand the competitive environment and increase efficiency and performance. Accordingly, we develop the following hypothesis.

H1: *Market orientation is positively related to knowledge codification from M&A activities.*

2.2.2 Entrepreneurial orientation and knowledge codification

EO refers to a firm-wide concept (Covin & Lumpkin, 2011; Lumpkin & Dess, 1996) that relates to learning from innovativeness, pro-activeness, and risk taking (Covin & Slevin, 1989; Miller, 1983) and is a driver of acquisition performance (Hunt, 2021). Entrepreneurial-oriented organizations are willing to take on high-risk projects with chances of high returns and are bold and aggressive in pursuing opportunities. Thus, entrepreneurial-oriented companies follow learning behaviors associated with exploration by questioning commonly held assumptions about customers, the competition, and the organization (Atuahene-Gima & Ko, 2001; Del Giudice, Garcia-Perez, Scuotto, & Orlando, 2019; Lumpkin & Dess, 1996). EO is deeply rooted in generative or exploratory learning (Atuahene-Gima & Ko, 2001; March, 1991; Slater & Narver, 1995). Hence, an important property of entrepreneurial-oriented firms is that they learn creatively (Calantone, Cavusgil, & Zhao, 2002), affecting how new insights are established (Hughes & Morgan, 2007).

Nonetheless, evidence exists that entrepreneurial-oriented companies rely on learning and knowledge management. Wang (2008) showed that the EO–performance link is mediated through a learning orientation and that EO positively influences a company's learning

orientation. Li and colleagues (2009) detected a similar mechanism by showing that EO indirectly strengthens performance by fostering knowledge creation processes—a finding that subsequent studies also supported (Li et al., 2010). Alegre and Chiva (2013) found evidence that managers of entrepreneurial-oriented firms encourage organizational learning because they learn through both experimentation and trial and error. Whereas "experimentation is the deliberate use of planned strategies in order to determine cause-effect relationships" (Kreiser, 2011, p. 1033), trial and error refers to planned and unplanned activities for determining future courses of action (Zahra, Sapienza, & Davidsson, 2006).

However, the evidence on deliberate learning mechanisms is mixed, which might stem from the generative and exploratory learning styles of entrepreneurial-oriented firms. Although some scholars showed that entrepreneurial alert information systems foster entrepreneurial behavior in corporations (Simsek, Heavey, & Veiga, 2010), others stressed that entrepreneurial-oriented firms tend to employ less formalization, centralization, and departmentalization (Matsuno, Mentzer, & Özsomer, 2002), leading to weaker deliberate learning. Simsek and Heavey (2011, p. 85) argued that entrepreneurial behavior "precipitates a process of renewed institutionalization, in which routines, systems, and procedures are revised to accommodate new initiatives and sources of knowledge." Therefore, they hypothesized a positive influence on organizational capital, which refers to institutionalized knowledge and codified experiences. However, they did not find support for this relationship and reasoned that codified knowledge is better observable and, thus, more prone to competitive responses. Consequently, these companies protect their knowledge by keeping it tacit. Nevertheless, knowledge codification might be an indicator of M&A performance (Heimeriks et al., 2015; Zollo, 2009; Zollo & Singh, 2004) because articulation—as a necessary precondition for codification (Zollo, 2009)—facilitates the understanding of previous decisions. In turn, articulation allows for the revelation of the underlying cause and effect

relationships (Trichterborn et al., 2016). Besides knowledge, which is sensitive to competitive responses (Simsek & Heavey, 2011), M&A activity is expected to also yield knowledge that is insensitive to such pressures and of greater value when made explicit (e.g., knowledge about due diligence processes). Thus, entrepreneurial-oriented acquirers are expected to engage in the knowledge codification of prior experiences. Therefore, the following hypothesis is developed.

H2a: *Entrepreneurial orientation is positively related to experience codification from M&A activity.*

Despite the expected positive effect of EO on knowledge codification, these codification efforts are expected to be weaker compared with market-oriented firms. The reasoning is twofold. First, market-oriented companies rely on systematic and formalized market intelligence activities (Jansen et al., 2006; Kohli & Jaworski, 1990), creating a strong knowledge base about customers, competitors, and markets (Hakala, 2011). This creation process is referred to as a market-based organizational learning capability (Malik et al., 2019) that secures constant investments in articulation and codification activities, thus making this knowledge available in the organization (Jansen et al., 2006; Malik et al., 2019; Pereira et al., 2019). Second, entrepreneurial-oriented learning capabilities rely to a lesser extent on formalization. Whereas entrepreneurial-oriented companies build up alert information systems to foster the realization of entrepreneurial strategies (Simsek et al., 2010), these knowledge management activities are more flexible through less formalization, centralization, and departmentalization (Matsuno et al., 2002). Thus, although entrepreneurial-oriented companies engage in deliberate and explicit knowledge generation (Simsek et al., 2010), they rely on tacit knowledge generation to a greater extent than do market-oriented companies (Pérez-Luño et al., 2016). Tacit knowledge generation is disseminated throughout the company more effectively through less formalized routines and processes (Chen et al., 2018). Thus, knowledge codification from acquisition

experience is expected to be more pronounced in market-oriented acquirers than entrepreneurial-oriented acquirers. The following hypothesis is proposed.

H2b: *The influence of entrepreneurial orientation on experience codification from M&A activity is weaker than the influence from market orientation on experience codification from M&A activity.*

2.3 Target context – "in the market" versus "out of the market" acquisition experience

Contextual factors such as institutional or technological domains have been demonstrated to be important factors that shape the impact of knowledge inflows in organizations (Natalicchio, Ardito, Messeni Petruzzelli, & Del Giudice, 2019). This is also the case for knowledge inflows triggered through acquisitions. The literature on acquisition learning provides ample evidence for the importance of considering the context and nature of experiences (Haleblian & Finkelstein, 1999; Kim & Finkelstein, 2009). Zollo and Singh (2004, p. 1240) pointed out that "given the system dependent and causally ambiguous nature of the organizational knowledge necessary to manage acquisitions, acquirers will be able to develop competence only in a fairly narrow knowledge domain, which will likely correspond to the management of a specific kind of acquisition processes." Thus, the codification of experiences is considered to entail both the opportunity to spread knowledge within the company and the downside of generalization that lacks applicability in specific situations (Heimeriks et al., 2012). As such, the target context plays an important role.

In this respect, research has shown that both the similarity (Ellis et al., 2011; Vermeulen & Barkema, 2002) and heterogeneity (Barkema & Schijven, 2008a) of previous M&A activity can be important drivers of subsequent M&A performance. Ellis and colleagues (2011) argued that "in the market" experience refers to acquisitions in similar product and/or geographic markets, whereas "out of the market" experiences occur outside familiar domains. Thus,

lessons drawn and skills learned from previous acquisitions differ depending on whether they stem from targets within or outside familiar markets (Kim & Finkelstein, 2009). Therefore, we consider previous "in the market" and "out of the market" experiences as important contingencies of knowledge codification (Graebner, Heimeriks, Huy, & Vaara, 2017; Haleblian & Finkelstein, 1999).

"In the market" acquisitions aim to exploit and build current capabilities and resources by strengthening (e.g., eliminating competitors) and elaborating (e.g., expanding technologies) companies' current market positions (Hayward, 2002). As such, they suit exploitative learning orientations and yield outcomes associated with the refinement and continuous improvement of current product-market combinations. Experience from M&A processes within the same domain (in the market) generates knowledge (Barkema & Schijven, 2008a) and helps companies develop processes, routines, and scripts (Hitt et al., 1998) that likely result in the application of familiar experiences from earlier M&A activity within similar domains (Ellis et al., 2011). The major advantages of such similar experiences can be found in the identification of well-grounded cause-effect relationships, but it might lead to complacency and simplicity (Miller, 1993; Miller & Chen, 1994). Nevertheless, firms find it easier to disentangle causal relationships within comparable settings and develop acquisition routines (Ellis et al., 2011). Thus, learning from "in the market" targets helps improve overall learning effectivity (Barkema & Schijven, 2008a).

In contrast, broader variety in the scope of M&A activities requires—each time—a greater extent of novel managerial effort. This is particularly the case when firms engage in M&A activity outside their familiar domain of activity, such as entering new markets (Hayward, 2002). For example, firms might acquire technologies or other strategic resources outside of their known domains (Lebedev, Peng, Xie, & Stevens, 2015; Peng, 2012) and are confronted with complex and unfamiliar environments (Ang, Benischke, & Doh, 2015; Guillen, 2002).

Basuil and Datta (2015) emphasized that misapplication of experience is more likely in unfamiliar contexts, eventually leading to failures in M&A activities. Thus, a lack of context similarity causes a simple agglomeration of heterogeneous experiences to be less beneficial because it falls short of being applicable in subsequent M&A activities (Haleblian & Finkelstein, 1999). Initially, learning might be more case specific, and extracting underlying cause-effect relationships that are generalizable to future events requires a greater stock of heterogeneous experiences. Therefore, an abstract codification strategy is considered to substantiate beneficial outcomes (Boisot & Li, 2005; Echajari & Thomas, 2015). Hence, "out of the market" acquisitions suit exploratory learning orientations associated with adding variation and experimenting. Building on these arguments, we expect that experience from "in the market" and "out of the market" acquisitions will enfold distinct influences on the relationships between MO and EO and knowledge codification.

2.3.1 Market orientation and knowledge codification – moderating effects of "in the market" versus "out of the market" acquisition experience

MO is associated with rigidity, stickiness (Keskin, 2006), and adaptive learning that stems from a company focusing on manifest customer needs (Atuahene-Gima & Ko, 2001). Consequently, MO leads to exploiting "opportunities that are associated with the current domain of the firm and that take advantage of its currently available learning and experience" (Atuahene-Gima & Ko, 2001, p. 56). Thus, market-oriented firms are expected to codify experiences from M&A activity even more when targets are related to their current markets and customer domains (Atuahene-Gima & Ko, 2001) to enhance their processes, routines, and scripts (Hitt et al., 1998). Similar experiences enable acquirers to develop their deliberate acquisition knowledge by incrementally adapting and refining it. Conversely, "out of the market" experiences are expected to dampen knowledge codification triggered through MO because the adaptive and exploitative learning character of market-oriented companies hinders extracting learnings from

added variation and experimentation. Thus, the following hypotheses are proposed.

H3a: "*In the market" acquisition experience positively moderates the market orientation–experience codification relationship*.

H3b: "*Out of the market" acquisition experience negatively moderates the market orientation–experience codification relationship*.

2.3.2 Entrepreneurial orientation and knowledge codification – moderating effects of "in the market" versus "out of the market" acquisition experience

In contrast to MO, EO yields explorative and generative learning (Atuahene-Gima & Ko, 2001; Slater & Narver, 1995). Generative learning is a related concept, and Slater and Narver (1995) assigned generative learning to a "frame-braking" notion. In this respect, learning challenges company norms, structures, and processes. Experiences from this kind of learning yield rather context-specific and tacit knowledge, which might lead to generalization errors (Haleblian & Finkelstein, 1999) when experiences are codified immediately. Furthermore, entrepreneurial-oriented firms learn through experimentation, trial and error, and—consequently—broader variation (Kreiser, 2011). This heterogeneity reduces redundancies (Lant & Mezias, 1990; Levitt & March, 1988) and gives managers broader variety of cause-effect relationships (Haunschild & Sullivan, 2002). Consequently, experiences from "in the market" acquisitions are expected to dampen the effect of EO on knowledge codification because the generative learning character of the firm is at odds with the adaptive learning outcomes. In this respect, research supports this proposition by revealing that technological relatedness is negatively associated with explorative learning (Schildt, Maula, & Keil, 2005). In contrast, "out of the market" transaction experiences are in line with the exploratory learning mechanisms of entrepreneurial-oriented companies. Yet, a greater stock of experiences is necessary to detect commonalities among heterogeneous experiences (Harrison et al., 2001). Therefore,

entrepreneurial-oriented acquirers are expected to increase knowledge codification with an increasing stock of "out of the market" experiences. Therefore, the following hypotheses are developed.

H4a: *"In the market" acquisition experience negatively moderates the entrepreneurial orientation–experience codification relationship.*

H4b: "*Out of the market" acquisition experience positively moderates the entrepreneurial orientation–experience codification relationship.*

Figure 1 summarizes the study model.

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3. Method

3.1 Sample and data

Because archival data sources do not provide consistent information on the constructs of interest (for EO and MO, see, e.g., Baker & Sinkula, 2009; for knowledge codification; see, e.g., Zollo, 2009), this study uses a primary data research survey methodology in 2014. This approach is in line with other research that focused on internal M&A aspects (Bauer, Strobl, Dao, Matzler, & Rudolf, 2018; Strobl, Bauer, & Matzler, 2020; Zaheer, Castañer, & Souder, 2013) and strategic orientations (Li et al., 2010). For the sample construction, the Zephyr database is used to identify acquirers. We focused on acquirers from the German-speaking part of central Europe (Germany, Austria, and Switzerland) that completed acquisitions between 2008 and 2011. The geographic restriction was necessary to minimize translation and comprehension problems. Additionally, the three countries recovered quite quickly from the 2008 economic and financial crisis (with only 2009 showing a negative GDP). Although the macro-economic context might influence growth strategies and, as such, M&A activity

(Cerrato, Alessandri, & Depperu, 2016), this is not of concern in this research. This research does not focus on the absolute level of deliberate learning activities, such as knowledge codification, but focuses on strategic organizational response patterns that are stable over time and that drive knowledge codification (Pérez-Luño, Wiklund, & Cabrera, 2011). Additionally, the specific timeframe was chosen to minimize a potential retrospective bias (Golden, 1992; Reus & Lamont, 2009).

The sample used in this study was restricted to manufacturing industries for two reasons. First, firms in manufacturing industries display long lifecycles (the intention is to observe a long time span) and rather constant acquisition activities over time with strategic interest. Second, industries differ regarding acquisition motives (Teusler, 2008) and behavior. This sample restriction was necessary to ensure that firms' codification behavior was comparable. For several reasons, this study concentrated on medium-sized firms with annual sales that did not exceed 1 billion Euros. First, this study sought to ensure that acquisitions are planned, executed, and controlled by top managers that were addressed in the survey. Second, large enterprises usually have various departments responsible for M&A activities (Trichterborn et al., 2016) or engage in M&A activities in a decentralized manner. Third, the firm size restriction in this study ensures that firms with a dominant strategic orientation are investigated. Acquirers that conducted simple legal restructurings, acquirers that were targets in a subsequent transaction, and acquirers that went bankrupt were removed from the sample. The final sample consisted of 761 companies.

A key informant research design targeting top managers as respondents (CEOs, CFOs, or heads of corporate development or M&A departments) was applied. Empirical evidence shows that top managers are most knowledgeable about strategic and organizational issues (Ellis, Reus, & Lamont, 2009; Homburg & Bucerius, 2005) even though their views might systematically vary from others' (Kumar, Stern, & Anderson, 1993). Six participants with an M&A background

from academia and management practice were invited to conduct a pre-test. Some examples were added, and some questions were modified on the basis of our pre-testers' suggestions and to improve comprehensibility. 115 usable questionnaires (response rate = 15.1%) were collected after sending out reminder emails and conducting follow-up telephone calls. This response rate is satisfactory and in line with other primary data research in the field, given the substantial length of the survey and the respondents' high position of (Homburg & Bucerius, 2005; Zaheer et al., 2013).

Two tests were conducted to assess a potential nonresponse bias. First, early and late respondents were compared. Second, a random sample of 115 firms from the initial sample was compared with the 115 received questionnaires on annual sales and the number of previous acquisitions (Armstrong & Overton, 1977). The results of t-tests indicated no significant differences. Additionally, because participants were allowed to respond to the survey in different ways (paper and pencil, online and on the phone) potential bias was checked regarding different strokes. Given that no significant differences were found, the conclusion reached was that the different strokes do not influence the research results.

Table 1 displays the descriptive data of the sample. In detail, the acquirers' origin; annual sales; average industry growth; whether the acquirer is involved in B2B, B2C, or both; and respondents' tenure and position are shown. The data resemble officially available statistics (e.g., Bloomberg) as, for example, the average industry growth prior to the acquisition mirrors real situations of firms in Germany, Austria, and Switzerland.

--- INSERT TABLE 1 ABOUT HERE ---

3.2 Measurement development

Already existing scales that were slightly modified to fit the research context were relied on for the measures. Please refer to Appendix A for further details on the exact wording of the

items used.

3.2.1 Knowledge codification

Companies can codify acquisition knowledge by creating blueprints, manuals, guidelines, and computer models (Singh & Zollo, 1998). Because the firms in the sample differ with regards to annual sales, which can be used as a predictor for formalized routines and more fine-grained tools, counting the number of management tools developed over time (Zollo, 2009) does not fit the needs of this study. Small and medium-sized firms likely lack opportunities to develop guidelines, tools, and written down knowledge because they do not have the corporate development departments or internal consultants, as do large firms. To avoid biases caused by firm-size effects, the measurement model introduced by Dhanaraj and colleagues (2004) is used to measure the extent of explicit codified knowledge. Respondents were asked to what extent experience from prior transactions was recorded according to three indicators. The items were assessed on a seven-point rating scale. After assessing the reliability of the overall scale ($\alpha = .765$), the items were aggregated by calculating the mean.

3.2.2 Market orientation

To operationalize MO, we followed Narver and Slater's (1990) concept comprising three behavioral dimensions—customer orientation, competitor orientation, and inter-functional coordination (Narver & Slater, 1990; Slater & Narver, 2000). For all indicators, a seven-point rating scale was applied. The sub-dimension of customer orientation was assessed using six indicators. The "after sales service" indicator had to be deleted because of a low item-to-total correlation (.398) to fulfill the requested reliability criteria ($\alpha = .764$). Competitor orientation was assessed using five items ($\alpha = .707$), and inter-functional coordination was assessed using three items ($\alpha = .732$). The items of each dimension were aggregated by calculating the mean. After testing the reliability of the overall MO scale ($\alpha = .843$), the three dimensions were

aggregated by calculating the mean.

3.2.3 Entrepreneurial orientation

Covin and Slevin (1989) introduced a commonly used method to assess EO; they built on the Miller (1983) conceptualization of a firm's strategic position. Strategic management and entrepreneurship studies have extensively used this measurement model (Rauch, Wiklund, Lumpkin, & Frese, 2009). Nine indicators with a seven-point semantic differential scale were incorporated to assess the three EO dimensions of innovativeness ($\alpha = .718$), risk taking ($\alpha = .731$), and pro-activeness ($\alpha = .682$). The "undo-the-competitors" item was deleted from the pro-activeness dimension because of a low item-to-total correlation (0.182). The items of each dimension were aggregated by calculating the mean. After assessing the reliability of the overall EO scale ($\alpha = .724$), the three dimensions were aggregated by calculating the mean.

3.2.4 In the market / out of the market experience

Because experience is traditionally considered the accumulated number of task loops (Argote & Miron-Spektor, 2011), acquisition experience was frequently measured by the number of transactions in a certain timeframe. However, the intention of this study is to investigate the contingency effects of different types of experience, namely, "in the market" and "out of the market." To assess the different natures of experience, two single-item measures were employed to ask about the number of previous acquisitions conducted "in the market" and "out of the market." According to the recommendation in Barkema and Schijven (2008a), the number of prior transactions was limited to a five-year timeframe before a specific transaction took place. Additionally, respondents were asked at an earlier stage in the questionnaire about the number of acquisitions carried out in the same time frame to control for correct answers.

3.2.5 Control variables

To assess other potential influences on our research model, seven control variables are

implemented in the analysis. *Annual sales* can be viewed as a predictor for well-developed acquisition routines (Barkema & Schijven, 2008a) and therefore could positively affect knowledge codification. Because the intention was to investigate the strategic side of knowledge codification, we controlled for *continuous operative control mechanisms* usually set by the acquirer. It is important to control for codification behavior, which is not associated with learning but with operational control, which simply represents daily corporate routines. Furthermore, the *articulation of experiences* is important for knowledge codification to take place. Thus, we controlled whether knowledge and experience can be easily acquired and transferred by direct personal mentoring. This is a precondition for knowledge codification (Zollo, 2009). Additionally, the *total amount of acquisitions undertaken* by a firm since its foundation might affect knowledge codification. Evidence exists that firms need approximately eight acquisitions until the performance effect becomes positive (Haleblian & Finkelstein, 1999), suggesting that the total amount of previous acquisitions is important to extract some generally applicable cause-effect relationships. However, organizations might also change their strategic directions, the context might change, or corporate forgetting might occur. As such, we also control for more recent acquisition experience in terms of the number of *acquisitions conducted in the past five years*. Organizational learning also depends on the environmental context (Fiol & Lyles, 1985). Thus, influences stemming from *environmental hostility* are also controlled for, which was assessed using two indicators adapted from Khandwalla (1977).

4. Results

Primary data research might face the problem of common method variance because the dependent and independent variables are assessed at the same time from the same informant (Podsakoff, MacKenzie, & Podsakoff, 2012). Besides several a priori measures that were implemented to antagonize this effect, and a potential method bias was tested post priori. Even

though Harman's Single-Factor test has been criticized, it was applied to obtain an indication of whether a common method bias problem existed (Podsakoff & Organ, 1986). The results of the exploratory factor analysis indicate that a single factor could only explain 19.46% of the total variance. Additionally, we tested discriminant validity of EO and MO, which is important because both could be subsumed under a broader construct of strategic orientation. The results of an exploratory factor analysis reveal two discrete constructs with an eigenvalue exceeding the 1.0 threshold. Furthermore, the cross-loadings are low. Thus, common method bias should not be a serious concern for the data used in this study.

Before testing the hypotheses, the data were analyzed for a potential multi-collinearity problem. Table 2 shows the descriptives and the correlation matrix of the variables. One correlation (between "in the market" experience and acquisition experience in the last five years) exceeds the recommended threshold of 0.65 (Tabachnick & Fidell, 2012). In any event, because "in the market" and "out of the market" experiences refer to transactions undertaken during the last five years prior to the focal transaction, a high correlation is not surprising. However, because the variance-inflation-factors (VIF) are far below recommended thresholds and range between 1.076 and 2.984 in the full model, multi-collinearity should not be an issue for the ongoing analysis.

--- INSERT TABLE 2 ABOUT HERE ---

Having used interval scales, we applied hierarchical OLS regressions for testing our hypotheses (Table 3). In the first step, the effects of the control variables on the dependent variable knowledge codification (model 1) are calculated. Annual sales positively influences knowledge codification (ß = .217; p = .016); thus, firm size is an indicator for more institutionalized and well-developed routines (Barkema & Schijven, 2008b). Environmental hostility detracts firms from codifying their experiences (ß = –.201; p = .022) because attention is drawn to react to competitor moves instead (King & Schriber, 2016; Pérez-Luño et al., 2016). Moreover, as

expected, the degree of knowledge codification increases with increasing acquisition experience (ß = .292; p = .003). In the second model, the direct effects of MO (H1) and EO (H2a) are tested. Hypotheses 1 and 2a can be confirmed from the positive and significant relationships returned for MO on knowledge codification (ß = .406; p = .000) and for EO on knowledge codification (ß = .212; p = .014). To investigate H2b, the 95% bias-corrected confidence intervals of the effects of MO (95% BCa CI = .227 – .585) and EO (95% BCa CI = .043 –.380) are compared. Even though the confidence intervals slightly intersect, the estimates do not fall in each other's confidence intervals. Accordingly, in line with H2b, market-oriented firms codify their knowledge to a larger extent relative to entrepreneurial-oriented firms.

--- INSERT TABLE 3 ABOUT HERE ---

In model three, the direct effects of the two moderator variables "in the market" and "out of the market" experiences are implemented. While "in the market" experience is not significant, "out of the market" experience positively impacts knowledge codification (ß = .159; p = .082). Thus, unfamiliar experiences generally lead to knowledge codification. In model 4, the interaction terms are added. The results show that "in the market" experience positively and significantly moderates the relationship between MO and knowledge codification (ß = .159; p = .068). The moderating effect of "out of the market" experience on the relationship between MO and knowledge codification is negative and significant (= –.191; p = .023). Thus, hypotheses H3a and H3b are both supported. The moderating effect of "in the market" experience on the relationship between EO and knowledge codification (H4a) is insignificant. The effect of "out of the market" experience on the relationship between EO and knowledge codification (H4b) is positive and significant (ß = .179; p = .043). Consequently, H4a is not supported, and H4b is supported. Figures 2 to 4 visualize the moderating effects of "in the market" and "out of the market" experiences.

--- INSERT FIGURE 2, 3 & 4 ABOUT HERE ---

For a more detailed understanding of the moderating effects of "in the market" and "out of the market" experiences on the EO, respectively, MO–knowledge codification relationships, we investigated the marginal effects. Applying Hayes' (2013) model 2 in the process macro (version 3.3) for SPSS, we calculated the conditional effect of EO and MO on knowledge codification at low (–1 SD), medium (mean), and high (+1 SD) levels of "in the market" and "out of the market" experiences. Table 4 shows that the effect of MO on knowledge codification is generally significant and positive except when "out of the market" experience is high. In fact, when MO acquirers have a high "out of the market" experience, they only codify their experiences when they also have a high "in the market" experience (ß = .341; p = .013). Furthermore, this effect is lower than when acquirers have low (ß = .673; p = .000) or medium "out of the market" (ß = .533; p = .000) and high "in the market" experiences. Thus, Table 4 effectively demonstrates the positive and negative moderating effects of "in the market" and "out of the market" experiences for the MO–knowledge codification relationship. Figures 5 and 6 visualize these conditional effects. Figure 5 shows that the effect of MO on knowledge codification is positive and significant when a market-oriented acquirer has made approximately two acquisitions "in the market." This effect further increases with an increasing acquisition activity "in the market." Figure 6 shows how the effect of MO on knowledge codification decreases with an increasing number of "out of the market" acquisitions. The effect between MO and knowledge codification becomes insignificant when an acquirer has done approximately four "out of the market" acquisitions (see Figure 6).

--- INSERT TABLE 4 AND FIGURES 5 & 6 ABOUT HERE ---

Table 5 and Figure 7 present the results of the same analysis for the EO–knowledge codification relationship. Table 5 demonstrates that "out of the market" experience drives the knowledge codification behavior of entrepreneurial-oriented acquirers. As soon as an entrepreneurial-oriented acquirer has medium levels of "out of the market" experience, the effect of EO on

knowledge codification becomes significant and positive. The extent of "in the market" experience does not affect the knowledge codification behavior of entrepreneurial-oriented acquirers. Figure 7 shows that entrepreneurial-oriented acquirers significantly start codifying the experience almost immediately from the start, after their first "out of the market" acquisition. The effect of EO on knowledge codification increases with an increasing number of "out of the market" acquisitions (see Figure 7).

--- PLEASE INSERT TABLE 5 AND FIGURE 7 ABOUT HERE ---

Additionally, the results of the control variables reveal some interesting insights. Total acquisitions (since a firm's foundation) negatively impact codification (ß = –.207; p = .019), whereas acquisitions in the last five years positively impact codification (ß = .224; p = .081). These results suggest that firms codify more recent experiences and tend to forget older ones, which is in line with research on corporate forgetting. This finding indicates that forgetting can be important when the dominant logic of the organization or the environment shifts (Bettis & Prahalad, 1995; Holan & Phillips, 2004). The results also show that environmental hostility reduces the codification of past acquisition experiences (ß = –.230; p = .004). Environmental hostility makes the future less predictable (Covin & Slevin, 1989), and firms might be restrained from the efforts necessary to codify experiences because they understand that their efforts might not pay off in future acquisitions.

5. Discussion

Most previous research on acquisition experience focused on the link between acquisition experience and performance and treated experience management as a black box (Dao & Strobl, 2019; Ellis et al., 2011). In this research, an important means enabling companies to convert actual experience into increased future performance—deliberate learning, specifically knowledge codification—was investigated (Heimeriks et al., 2015; Zollo & Singh, 2004).

Thus, calls to shed light on the antecedents of knowledge codification from M&A were followed (Schriber & Degischer, 2020), acknowledging that acquisitions do not happen as isolated, enclosed events but rather in broader contexts (Rouzies et al., 2019). The importance of the organizational and the target contexts is highlighted to better understand how knowledge codification develops in organizations. Hence, this study showed the conditions under which acquirers with distinct characteristics actually engage in deliberate learning activities, adding new exploratory means to often contradicting results in the literature on the acquisition experience–performance link (see, for instance, Barkema & Schijven, 2008a).

We investigated how firms differ in their deliberate learning behavior based on their strategic orientations. Strategic orientations are crucial for an understanding of deliberate learning in companies. Strategic orientations dictate the organizational cognition that shapes organizations in terms of structures, routines, and processes (Caputo, 2021; Eggers & Kaplan, 2013; Murtha et al., 1998; Prahalad & Bettis, 1986) and that determines resource allocation (Amit & Schoemaker, 1993; Sirmon & Hitt, 2009) and specific learning and information processing patterns (Atuahene-Gima & Ko, 2001; Slater & Narver, 1995). Specifically, EO and MO are distinguished because both are associated with different types of organizational learning that jointly contribute to sustainable company development (Atuahene-Gima & Ko, 2001; Baker & Sinkula, 2009; March, 1991; Slater & Narver, 1995). This study provides evidence that organizations process M&A experiences differently depending on their corresponding strategic orientations. The results of this study clearly demonstrate that MO and EO trigger knowledge codification following M&A activity and prompt the development and refinement of scripts and routines extracted from such events (Zollo & Singh, 2004; Zollo & Winter, 2002). Nevertheless, MO leads to stronger codification efforts compared with EO.

The major differences concerning market- and entrepreneurial-oriented acquirers are found in the context of experiences. Differences in knowledge codification behavior originate from

dissimilar learning styles inherent in these complementing strategic orientations (Atuahene-Gima & Ko, 2001; Baker & Sinkula, 2009; Slater & Narver, 1995) and the respective contextual interplay. Knowledge codification triggered through a MO is accelerated when experiences display familiarity stemming from "in the market" acquisitions that refer to acquiring targets within a market with which the acquirer is familiar. Conversely, heterogeneity in M&A activities stemming from unfamiliar "out of the market" acquisitions dampens knowledge codification of market-oriented acquirers. Thus, market-oriented acquirers favor exploitative learning mechanisms (Atuahene-Gima & Ko, 2001; March, 1991), leading to incremental and exploitative improvements.

In contrast to MO, the underlying mechanisms for knowledge codification elicited through the EO of acquirers are based on contextually heterogeneous prior experiences made during "out of the market" acquisitions. As such, entrepreneurial-oriented acquirers aim to extract lessons learned from acquisitions out of their market and identify mechanisms that are similar across different types of acquisitions. This aim is in line with the characteristics of explorative learning (Atuahene-Gima & Ko, 2001), experimentation, and trial and error approaches (Kreiser, 2011; Lant & Mezias, 1990; Levitt & March, 1988). However, similar experiences collected from "in the market" acquisitions do not affect knowledge codification. These results add to the extant research that investigated the influences of strategic orientations on knowledge creation or that investigated different organizational or environmental contexts in combination with exploitation, exploration, or ambidexterity (Cao et al., 2009). According to the literature, MO decreases and EO increases tacit knowledge generation (Pérez-Luño et al., 2016). This study contributes to this debate by showing that such knowledge creation processes in M&A activity depend on the context of experiences. Homogeneous ("in the market") and heterogeneous ("out of the market") experiences have diverging propensities and drawbacks. Further, firms apply different approaches to deliberate learning depending on their strategic orientations. Thus, a

more fine-grained picture of how different firms handle different types of experiences is provided. This study also contributes to the stream of literature on transfer theory, which debates the contingencies of experience relatedness and its situational fit (e.g., Haleblian & Finkelstein, 1999). These findings also add to the literature that investigated organizational knowledge inflows from external sources (Natalicchio et al., 2019) by showing how such knowledge inflows affect knowledge management in the form of deliberate learning activities depending on their contexts.

Another relevant insight stems from the results of our control variables. Interestingly, we find that the total amount of acquisitions since a company's foundation negatively relates to knowledge codification, whereas more recent experiences (acquisition experience stemming from the past five years) are positively related. This finding is somehow counterintuitive because an assumption could be made that the total stock of accumulated experiences contributes to knowledge codification and capability development (Dierickx & Cool, 1989; Helfat & Raubitschek, 2000). Indeed, acquisitions take place in changing environments, serve multiple purposes aligned with a firm's strategy, and are often part of changing acquisition programs (Laamanen & Keil, 2008). As such, the value of past experiences might depend on a situational fit, and more recent experience helps managers understand the context and shape knowledge codification as part of an organizational response (Eggers & Kaplan, 2013). This statement is in line with, for example, research on complex service systems that indicate that "traditional approaches are useless in supporting decision makers in facing challenges" (Polese, Barile, Caputo, Carrubbo, & Waletzky, 2018, p. 397). The statement also highlights the importance of corporate forgetting for renewal (Holan & Phillips, 2004). We also find that environmental hostility has a negative impact on knowledge codification, which complements the research on the interaction of different learning styles and environmental dynamism (Jansen et al., 2006) by showing that the costs of knowledge codification might exceed its benefits for

cases in which the future is less predictable.

To conclude, the findings of this study provide evidence that companies face the need to align MO and EO to employ efficient deliberate learning mechanisms depending on the similarity between prior and subsequent acquisitions. In particular, when the acquisition experience encompasses significant homogenous and heterogeneous experiences, aligning MO and EO is important for capturing lessons learned from both types of experiences. Thus, this study provides additional evidence that combining MO with EO yields benefits for organizations.

6. Conclusions

6.1 Theoretical conclusions

First, this study underlines the relevance of broadening the context of acquisitions to better understand acquisition experience and deliberate learning mechanisms (Schijven et al., 2021). Thereby, investigating the organizational context of deliberate learning adds to the acquisition learning literature because not all firms codify experiences from past acquisitions alike. Because strategic orientations are widely understood as social learning mechanisms that shape firms' routines and problem-solving procedures (e.g., Atuahene-Gima & Ko, 2001) or capability development (Lin & Kunnathur, 2019; Mu, Thomas, Peng, & Di Benedetto, 2017), we find that firms' strategic orientations affect their codification behavior. Consequently, this study provides empirical evidence that firms differ in the application of deliberate learning mechanisms. Second, whereas deliberate learning and codification are viewed as essential for success (Heimeriks, 2010; Zollo & Singh, 2004), this study shows that firms follow different paths to codify experiences from prior M&A activities. This study argues that, on the basis of Haleblian and colleagues (2009), the target context—simply put—the context in which prior experiences were made plays an important contingency role. This argument complements the research that focused on the accumulated number of previous acquisitions. Whereas firms with

a dominant MO increase codification efforts when experiences are similar, or previous targets were similar to them, they decrease their efforts when experiences are heterogeneous. In contrast, dominant entrepreneurial-oriented firms accelerate knowledge codification in the context of heterogeneous experiences or "out of the market" targets. This finding contributes to the transfer theory stream in M&A research (Barkema & Schijven, 2008a; Ellis et al., 2011; Haleblian & Finkelstein, 1999) and to the literature on deliberate learning in M&A activities (Barkema & Schijven, 2008a; Zollo, 2009; Zollo & Singh, 2004). This study shows that both similar and heterogeneous experiences can foster deliberate learning, but the underlying mechanisms are different depending on the organizational context.

Although several authors suggested that acquisitions involve a pattern of similar tasks (Sayan Chatterjee, 2009) that might constitute a long-term M&A capability (Trichterborn et al., 2016), we find that firms with different strategic orientations require different types of experiences to extract knowledge and engage in deliberate learning practices and knowledge codification, respectively. The results indicate a demand for a better understanding and an analysis of different types of experiences. For example, it might be valuable to also investigate process experience that is easier to extract (Trichterborn et al., 2016). This research additionally contributes to the learning literature on strategic orientations (Li et al., 2010; March, 1991; Schildt et al., 2005). This paper also adds to ongoing debates on knowledge management (Úbeda-García et al., 2020) and the knowledge-based view of the company (Pereira & Bamel, 2021). As such, this study complements research investigating how the exploration and exploitation of organizational knowledge is impacted by contextual factors (Gonzalez & de Melo, 2018).

Future research should also draw attention to the beneficial or detrimental mechanisms of knowledge codification or the elements of experience that should be codified. We identify potential for analyzing whether codified experience can be beneficial for processes of strategic

decision-making. Additionally, an acquisition program perspective (Laamanen & Keil, 2008) is beneficial to observe the aggregated effects of experience because negative M&A outcomes might also contribute to learning and affect the acquisition program. Fourth, the negative impact of the total acquisition experience control variable and the positive impact of the control variable acquisition experience from the past five years (see model 4 in Table 3) demonstrates that the codification of acquisition experience relates to more recent acquisitions and confirms the scholarly work on corporate forgetting (Meschi & Métais, 2013). This finding indicates that codified knowledge needs to be adapted over time to reflect changing contexts.

In line with the extant literature on deliberate learning (Keeling, Cox, & de Ruyter, 2020; Mittal, 2019), this study focuses on organizational antecedents of knowledge codification. Future research should apply a micro-foundational perspective (Barney & Felin, 2013) that investigates how organizational members' individual-level behavior aggregates to organizational learning. For instance, recent research highlighted the importance of organizational members' knowledge hiding behavior impeding organizational learning (Caputo, Magni, Papa, & Corsi, 2021) or motivational factors that might stimulate learning (Schijven et al., 2021). Investigating how knowledge hiding influences acquisition-related learning seems especially fruitful because post-merger integration is associated with in-group and out-group biases among acquirer and target members (Dao, Bauer, Strobl, Matzler, & Eulerich, 2016). Such biases might trigger knowledge hiding (Sheshadri Chatterjee, Chaudhuri, Thrassou, & Vrontis, 2021) and hamper deliberate learning (Zollo & Singh, 2004; Zollo & Winter, 2002). Another interesting aspect revolves around knowledge flows within an organization. Because acquisitions involve multiple departments, future research should contribute to ongoing debates over knowledge flows within organizations, specifically after reorganization (Atakhan-Kenneweg, Oerlemans, & Raab, 2021), and how these activities contribute to the development of an M&A capability.

Finally, research highlights the increasing importance of human-machine interactions in knowledge management and deliberate learning (Caputo, 2017; Iandolo, Loia, Fulco, Nespoli, & Caputo, 2020). The development of digital technologies that aim to ease the collection, combination, and use of data makes effective knowledge management and deliberate learning processes even more important and opens the door for more collaborative perspectives in this respect (Iandolo et al., 2020). These developments might affect deliberate learning from M&A activities in multiple ways, opening up fertile future research avenues. For instance, research investigating the inclusion of multiple stakeholders from the acquirer and target organizations into knowledge articulation and codification activities using new technologies is important. Further, evidence exists of the increasing importance of artificial intelligence and big data management in knowledge management systems (Caputo, Mazzoleni, Pellicelli, & Muller, 2020; Iandolo et al., 2020). In this respect, research investigating the use of such technologies in terms of due diligence or target screening processes would be especially fruitful.

6.2 Managerial conclusions

The first managerial implication stems from firms having different approaches to deliberate learning and knowledge codification. Knowledge codification behavior clearly depends on the strategic posture. MO triggers learning from homogeneous experiences, whereas EO sparks learning from heterogeneous ones. Because different companies' units might involve different orientations and, thus, distinct learning approaches, integration managers should attempt to involve these different units in knowledge management activities following transactions, such as reflecting on the success of acquisition projects. Integration managers should also draw attention to the sensitization of knowledge codification instead of simply codifying their stock of knowledge.

Second, managers should be aware of the type of experience inherent in the firm. Simply

relying on the number of prior acquisitions is not a sufficient and reliable indicator of future success because superstitious learning could result in negative effects (Zollo, 2009). In the context of M&A, no "one-size fits it all" approach exists. Because M&A transactions are complex organizational processes, firms should pay attention to different types of acquisitions, such as "in the market," "out of the market," domestic, international, or cost- or innovation-driven ones. Managers should be aware that the lessons learned from one acquisition are not unconditionally transferable to a subsequent transaction. Thus, they should reflect on past acquisitions and the type of firms they have integrated to find commonalities and differences within the acquisition process and determine cause-effect relationships by considering causal ambiguity (Cording et al., 2008) and avoiding misapplying experience.

6.3 Limitations

This study is not without limitations. First, the sample focused on firms engaged in acquisitions between 2008 and 2011 to mitigate recollection bias. However, the capacity to remember decreases over time (Sudman & Bradburn, 1973). Nonetheless, this study focuses on big topics (prior acquisitions are important strategic events in a firm's history), and knowledge codification continuously takes place. Thus, the decreasing capacity of recollection is assumed not to be a serious problem. Additionally, the chosen period covers a post-financial crisis situation. The macro-economic context might affect firm behavior and, thus, our results, even though Germany, Austria, and Switzerland recovered quite quickly from the crisis (Cerrato et al., 2016). Future research could investigate the analyzed relationships in different macro-economic contexts to add further elements to the understanding of the relationships. Second, humans tend to develop an overly positive assessment in the long run (Golden, 1992). This effect cannot be excluded with certainty, even though the success rates reported in this study do not differ from those regularly reported in research. Additionally, key informant bias might be an issue when interpreting the data because this potential bias cannot be excluded given the

research design (Kumar et al., 1993). Third, a cross-sectional research design was applied even though a longitudinal one would be preferable. A cross-sectional research design was selected for three reasons. First, managerial turnover makes it difficult to identify the pertinent respondents. Second, managers' willingness to participate in primary data research is rather low. Third, over time, strategic orientations and the corresponding learning behavior are stable and persist to some degree (Covin & Lumpkin, 2011). Thus, a cross-sectional design is more practical even though it would be a valuable future research not just to investigate the level of codification but rather the process of codification. Fourth, this study ignores tacit knowledge, given the focus on codified experiences. Even though tacit knowledge is cited to be potentially dangerous in an M&A context (Zollo, 2009), the research field would be interesting. Investigating whether codified experiences and tacit knowledge complement each other or if their value is case specific would be highly relevant. Finally, the sample restrictions regarding countries, industries, and firm size limit the generalizability of the results, which is important to highlight. On the one hand, the institutional framework in German-speaking countries is less liberal than in, for example, the United Kingdom or the United States (Capron & Guillén, 2009; Homburg & Bucerius, 2005). On the other hand, the investigated industries are rather conservative and stable and display long lifecycles; thus, they are not comparable with, for example, high-tech or IT acquirers and firms from volatile and fast-moving industries.

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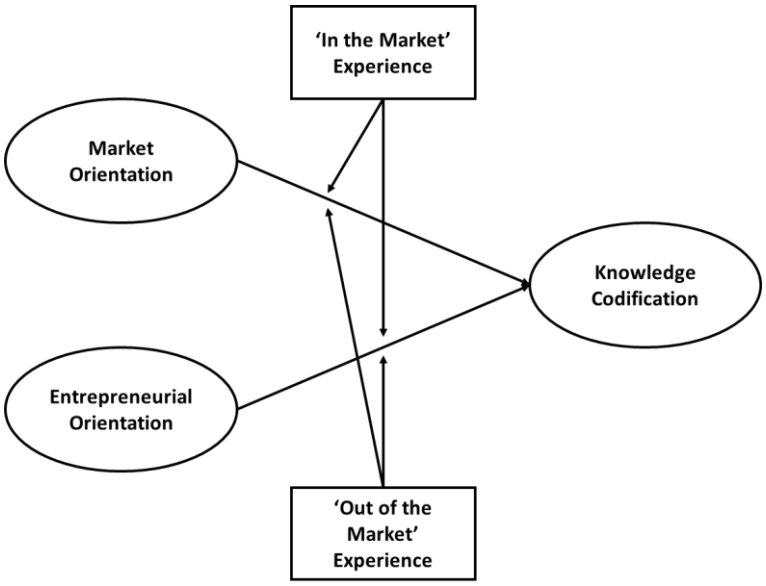

Figure 1: Study Model

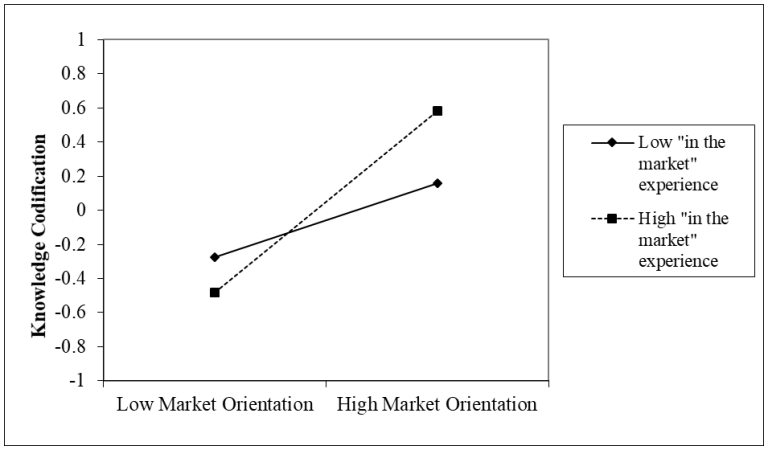

Figure 2: The moderating effect of "in the market" experience on the relationship between MO and knowledge codification

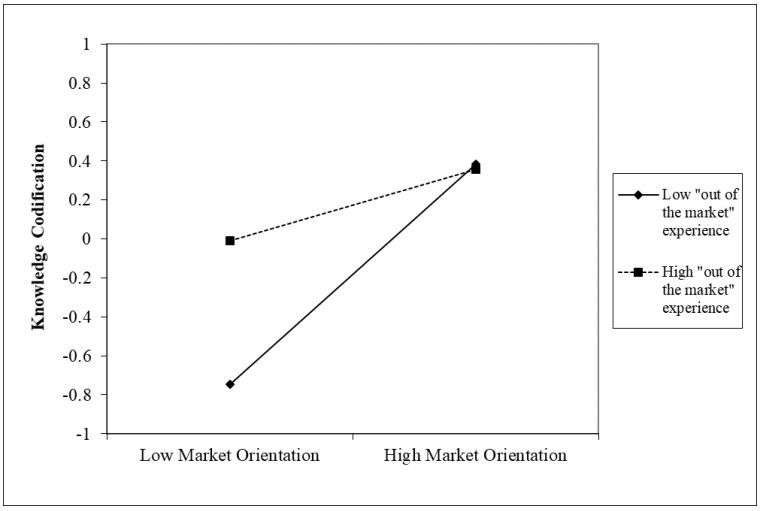

Figure 3: The moderating effect of "out of the market" experience on the relationship between MO and knowledge codification

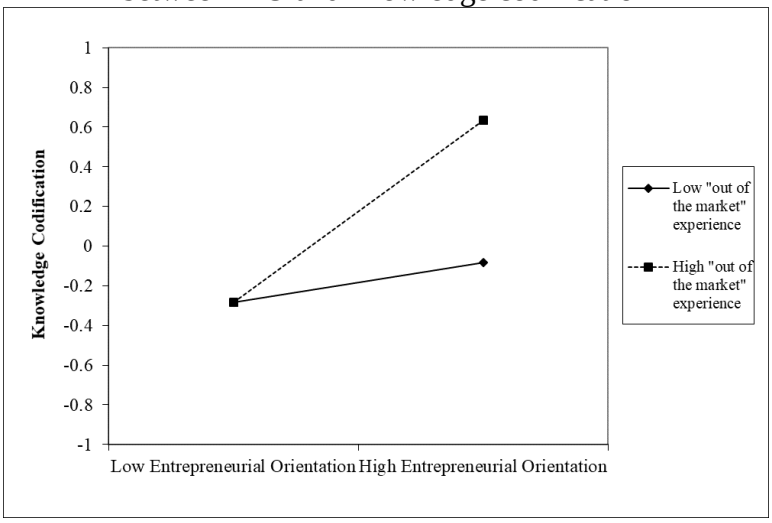

Figure 4: The moderating effect of "out of the market" experience on the relationship between EO and knowledge codification

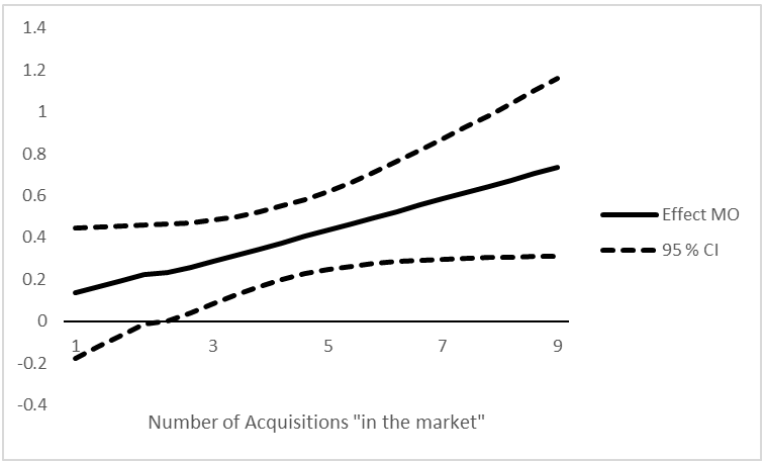

Figure 5: Conditional Effects for the MO Knowledge Codification Relationship for "in the market" Experience

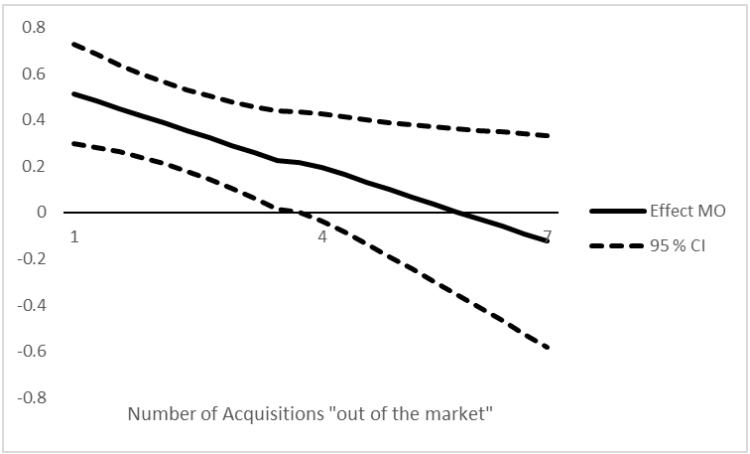

Figure 6: Conditional Effects for the MO Knowledge Codification Relationship for "out of the market" Experience

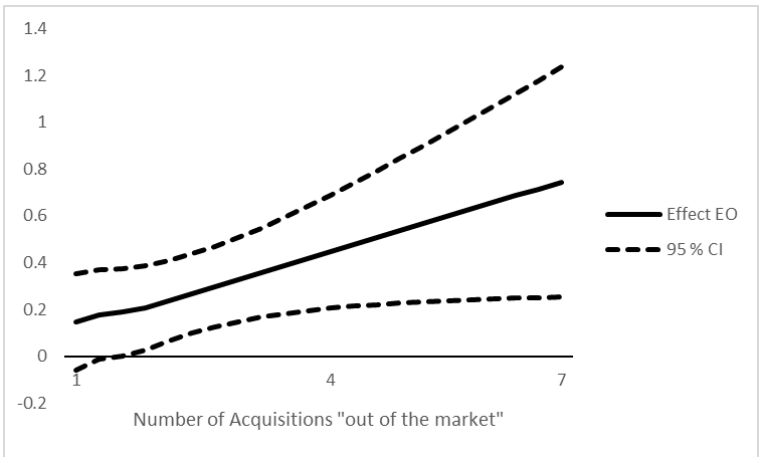

Figure 7: Conditional Effects for the EO Knowledge Codification Relationship for "out of the market" Experience

Sample Description					
Acquirer Seat		Tenure of Respondents	In %	Annual sales	in %
	in n	< 1 year	2.6	< 25 million	17.4
Germany	70	2-4 years	17.4	25-49 million	10.4
Austria	30	5-7 years	38.3	50-99 million	20.0
Switzerland	15	8-10 years	23.5	100-249 million	13.0
		> 10 years	18.3	250-499 million	17.4
				500-1,000 million	7.8
				>1,000 million	13.9
Acquirer Business	In %	Position	In %		
B2B	56.5	CEO	38.7	Average industry growth	in %
B2C	23.5	CFO	28.3	>-15%	3.5
both	20	M&A Department	15.3	-15% to -5%	4.3
		Others	17.7	-5% to 0%	14.8
				0% to 5%	50.4
				5% to 10%	22.6
				11% to 20%	3.5
				21% to 30%	0.9

Table 1: Descriptive data

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	Industry Growth	1											
(2)	Annual Sales	.032	1										
(3)	Continuous Control	.131	.043	1									
(4)	Articulation possibilities	.120	.025	.014	1								
(5)	Total Acquisitions (since	.103	.177†	.122	-.001	1							
(6)	Acquisition Experience	.071	.323**	.163†	.095	.394**	1						
(7)	Environmental Hostility	-.111	-.106	-.185*	.105	-.081	-.037	1					
(8)	Market Orientation	.103	.313**	.378*	.145	.210*	.137	-.077	1				
(9)	Entrepreneurial	.048	.118	-.213*	.310*	.108	.109	.069	-.188	1			
(10)	"in the market"	-.026	.330**	.003	.023	.332**	.690**	-.059	.108	.058	1		
(11)	"out of the market"	.097	.054	.092	.162†	.235*	.486**	-.025	.130	.076	.211	1	
(12)	Codified Experiences	.171†	.332**	.162†	.064	.142	.372**	-.251	.426*	.166	.279	.304	1
	Mean	3.98	3.82	5.50	4.12	23.01	3.87	3.76	4.85	4.16	4.19	2.32	4.01
	STDV	1.043	1.981	1.471	1.702	23.691	1.513	1.024	0.890	1.09	2.12	1.79	1.62

Note: † p<.10; * p<.05; ** p<.01; *** p<.001; two-tailed test

Table 2: Correlations, Mean values and STDV

Knowledge Codification	Model 1	Model 2	Model 3	Model 4
Market Orientation (MO)		.406***	.390***	.374***
Entrepreneurial Orientation (EO)		.212*	.214*	.279**
"in the market" experience			.060	.054
"out of the market" experience			.159†	.179†
EO * "in the market"				-.027
EO * "out of the market"				.179*
MO * "in the market"				.159†
MO * "out of the market"				-.191*
Industry Growth	.113	.098	.096	.086
Annual Sales	.217*	.078	.095	.061
Continuous Control	.058	-.037	-.023	-.038
Articulation possibilities	0.37	-.082	-.097	-.116
Total Acquisitions (since foundation)	-.046	-.128	-.139	-.207*
Acquisition Experience (last five	.292**	.317***	.199	.224†
Environmental Hostility	-.201*	-.212**	-.205*	-.230*
F-Value	5.249	7.500	6.487	5.771
Adjusted R^2	.207	.339	.346	.386
R^2	.256	.391	.409	.466

Note: † p<.10; * p<.05; ** p<.01; *** p<.001; two-tailed test

Table 3: Results of regression analysis

"out of the market" experience	"in the market" experience	Effect MO	se	t	LLCI	ULCI
low	low	.355**	.129	2.763	.100	.610
low	medium	.514***	.108	4.750	.299	.729
low	high	.673***	.148	4.565	.381	.966
medium	low	.215†	.123	1.742	-.030	.459
medium	medium	.374***	.088	4.230	.198	.549
medium	high	.533***	.124	4.311	.288	.778
high	low	.023	.159	.146	-.292	.338
high	medium	.182	.120	1.522	-.055	.420
high	high	.341*	.135	2.522	.073	.609

Note: † p<.10; * p<.05; ** p<.01; *** p<.001; two-tailed test

Table 4: Conditional Effects for Moderations of the MO Knowledge Codification Relationship

"out of the market" experience	"in the market" experience	Effect EO	se	t	LLCI	ULCI
low	low	.175	.125	1.402	-.073	.421
low	medium	.148	.104	1.416	-.059	.354
low	high	.121	.135	.892	-.148	.389
medium	low	.306	.117**	2.627	.075	.537
medium	medium	.279	.086**	3.248	.109	.450
medium	high	.252	.115*	2.192	.024	.480
high	low	.485	.156**	3.120	.177	.794
high	medium	.458	.126***	3.637	.208	.708
high	high	.431	.140**	3.081	.154	.709

Note: † p<.10; * p<.05; ** p<.01; *** p<.001; two-tailed test

Table 5: Conditional Effects for Moderations of the MO Knowledge Codification Relationship

APPENDIX A

Questionnaire Items Used in Variables

DEPENDENT VARIABLE:

Knowledge codification (3 Items)
To what extent has experience from prior transactions been recorded? (1 = small extent, 7 = high extent) Does your firm have:
Written knowledge about the M&A process (e.g. due diligence checklists and / or guidance)
Procedural manuals or technical manuals (e.g. manuals for adapting systems, integration manuals, system-training manuals)
Written knowledge about management techniques

EXPLANATORY VARIABLES:

In this section, we enquire the strategic orientation of the acquiring company and the strategic motives for the focal transaction.

Market Orientation (14 Items)
To what extent do the following statements apply to your company? (1 = not at all, 4 = neutral, 7 = applies completely)

Customer Orientation
Important customers are served by top management
Our strategies are driven by customer value
We regularly analyze customer satisfaction
Customer satisfaction drives our aims and objectives
Customer satisfaction is closely monitored
After-sales service is important to us

Competitor Orientation
Salespeople share competitor information
We respond rapidly to competitor actions
Top managers regularly discuss competitor' strategies
We target customers providing opportunities for competitive advantage
Competitors base their strategies on customer needs

Interfunctional Coordination
Our managers know how employees can create customer value
We openly share customer information in the company
Our business processes are integrated and focus on customer needs
Share resources with other business units

Entrepreneurial Orientation (9 Items)

In general, the top managers of my firm favor …

a strong emphasis on the marketing of tried and true products or services	1 to 7	a strong emphasis on R&D, technological leadership, and innovations

Which changes in terms of productlines or services were there during the last 5 years?

No new lines of products or services were introduced to the market	1 to 7	Many new products or services were brought to the market
Changes in product or service lines have been mostly of a minor nature	1 to 7	Changes in product or service lines have been extensive/radical

In general, the top managers of my firm …

have a strong proclivity for low-risk projects (with normal and certain rates of return)	1 to 7	have a strong proclivity for high-risk projects (with uncertain chances of very high returns)
believe company objectives are best achieved by exploring gradually via timed, incremental behavior	1 to 7	believe bold, wide-ranging acts are necessary to achieve the firm's objectives

When confronted with decisions involving uncertainty, my firm typically adopts …

a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	1 to 7	a bold posture in order to maximize the probability of exploiting potential opportunities

In dealing with competitors, …

my firm is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1 to 7	very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
my firm typically responds to actions which competitors initiate	1 to 7	my firm typically initiates actions which competitors then respond to
my firm typically seeks to avoid competitive clashes, preferring a „live-and-let-live "posture	1 to 7	my firm typically adopts a very competitive „undo-the-competitors" posture

"In the market" and "out of the market" acquisition experience

How many of the transactions conducted within five years prior to the focal acquisition were conducted "in the market" of your company and how many aimed at entering new markets "out of the market" (please insert a count)?

"in the market" _____

"out of the market" _____

CONTROL VARIABLES

Annual Sales

Please indicate the amount of your current annual sales. (1 = less than 25 million €, to 7 = more than one billion €)

Industry Growth

Evaluate the average industry growth in the last three years prior to the acquisition. (1 =-15%, 2 = -15% - -5%, 3 = -4% - 0%, 4 = 1%-5%, 5 = 6%-10%, 6 = 11%-20%, 7 = 21%-30%, 8 = >30%)

Continuous Control

A continuous control of results is carried out by the headquarter (e.g. through financial results, turnover- and marketing figures) (1 = do not agree at all, 4 = neutral, 7 = fully agree)

Articulation Possibilities

To what extent does the following statement apply to M&A experience in your company? Knowledge and experience can be easily acquired and transferred by direct personal mentoring (1 = do not agree at all, 4 = neutral, 7 = fully agree)

Total Acquisitions

How many M&A transactions did your company approximately make since foundation.

_____ (Please insert a count)

Acquisition Experience (last five years)

How many transactions has your firm conducted within five years prior to the focal acquisition? (1 = 0; 2 = 1-2; 3 = 3-4;4 = 5-6;5 = 7-8; 6 = >8)

Environmental Hostility

How would you describe the company environment?

Very safe, little threat to the survival and well-being of my business unit.	1 to 7	Very risky, one false step can mean my business unit's undoing.
Rich in investment and marketing opportunities.	1 to 7	Very stressful, exacting hostile; very hard to keep afloat.