Organizational Learning, Knowledge Orchestration, and CEO Personality – An Integrative Coordination Perspective On Value Creation In Acquisitions

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Declaration

This thesis has not been submitted in support of an application for another degree at this or any other university. It is the result of my work and includes nothing that is the outcome of work done in collaboration except where specifically indicated. Many of the ideas in this thesis were the product of discussion with my supervisors Professor Florian Bauer and Professor Martin Friesl.

Abstract

This dissertation develops an integrative coordination perspective on acquisition management. In doing so, three distinct studies provide comprehensive insights into three coordination devices that affect value creation in acquisitions differently. First, the implications of a strategic M&A intent influence the application of past learnings in acquisition integration. Second, orchestration of managerial knowledge, mitigate delays in acquisition integration. Third, the dissertation sheds light on CEO personality orchestration by highlighting the relationship between CEO similarity and shareholder wealth destruction. Thus, the dissertation's findings contribute to organizational learning theory, the knowledge-based view, and the upper echelons theory. Furthermore, by linking three distinct studies through a lens of coordination, the dissertation offers a holistic approach, offering insights into the different nuances of coordination and its importance for successful acquisition management. Such findings enrich our understanding of acquisitions by directly contributing to theory while providing an integrative perspective to unify a dispersed body of acquisition literature.

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First and foremost, I am extremely grateful to my supervisors, Prof. Florian Bauer and Prof. Martin Friesl for their invaluable advice, continuous support, and patience during my Ph.D. study. Their immense knowledge and plenteous experience have encouraged me all the time in my academic research and daily life. I would also like to thank Dr. Marian Iszatt White and my colleague Evans Boamah for their support. I would like to thank all the members of the Entrepreneurship and Strategy Department, for their advice and support in activities such as the writing retreats. It is their kind of help and support that have made my study and life in the United Kingdom a wonderful time. Finally, I would like to express my gratitude to my parents and friends. Without their tremendous understanding and encouragement over the past few years, it would be impossible for me to complete my study.

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Abbreviations

CEO
Chief Executive Officer 12
KBV
Knowledge-Based View 10
RBV
Resource-Based View 12

Research Synopsis

This dissertation develops an integrative coordination perspective on acquisition management by combing three studies. The combination of the studies allows for a holistic perspective shedding light on the relationship between coordination and value creation in acquisitions. However, a synopsis is needed to argue for a theoretical interconnectedness and support an overarching theme. Thus, the following synopsis and its chapters aim to offer an introduction to the three studies and interlink each paper towards the common theme. Figure 1 provides a summary of the dissertation structure, consisting of five chapters.

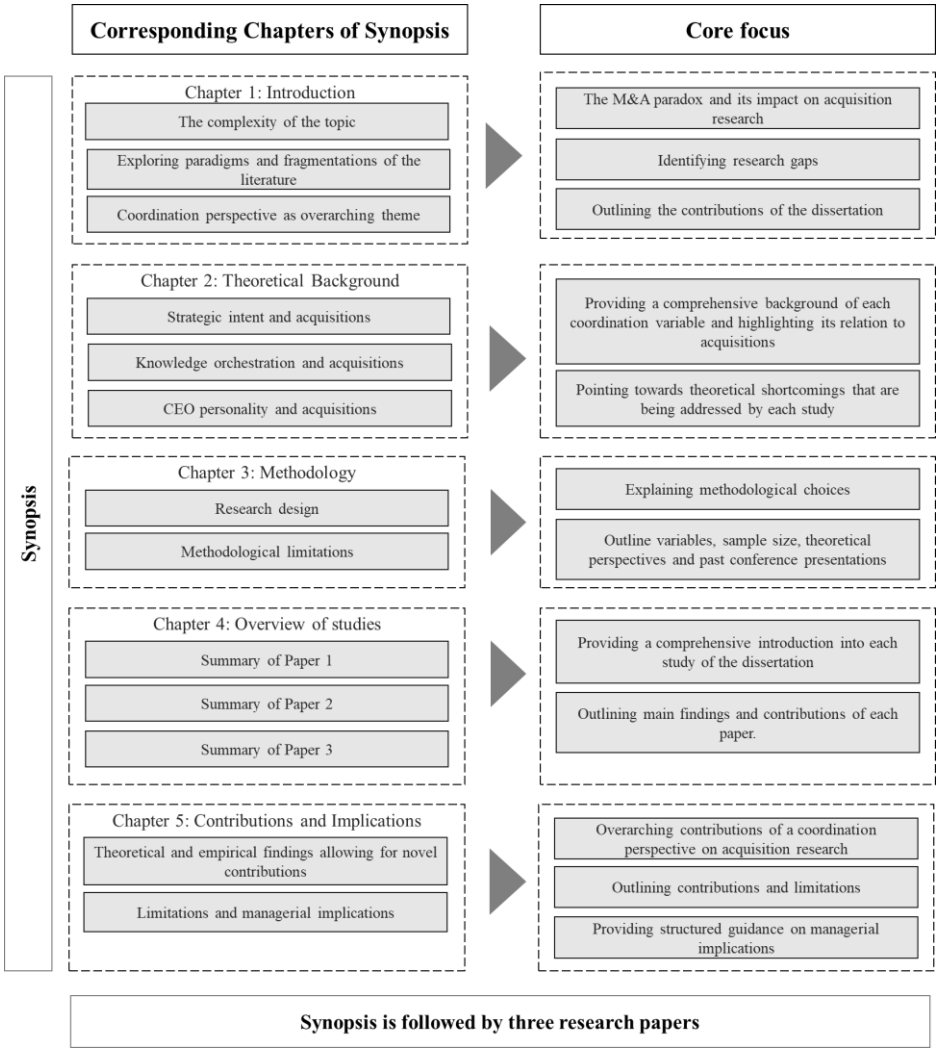

Figure 1: Structure of dissertation

Chapter 1 offers an introduction to the acquisition literature. Furthermore, the complexity, paradigms, and fragmentation of the acquisition literature are discussed. Moreover, research gaps are identified and the contributions of the dissertation are outlined.

The aim of Chapter 2 is to provide a comprehensive summary of each studies' theoretical background. Thus, the coordination variables of a strategic intent, knowledge orchestration, and CEO personality orchestration are introduced. Furthermore, Chapter 2 links the coordination variables with recent acquisition studies, stressing their importance for successful acquisition management. In addition, the chapters point toward several theoretical gaps and address them.

Chapter 3 provides insights into the methodical choices and limitations of the studies—the chapter outlines which methods have been applied and what type of data has been collected. Due to the potential weaknesses of primary survey data, several biases are discussed and, later on, addressed in each study. Furthermore, the chapter offers information on the chosen variables, sample size, theoretical perspectives, and conference presentations.

Chapter 4 offers a comprehensive summary of each study in the dissertation. The aim of the summaries is to provide a brief introduction of the most important aspects of each study. Each summary starts with an introduction of the research topic and a methodical discussion. Afterward, each summary ends by outlining each paper's main findings and contributions.

Chapter 5 of the synopsis discusses the dissertation's limitations, theoretical contributions, and managerial implications. In the beginning, the chapters introduce the

overarching theme's theoretical contributions and how these findings complement prior research on coordination. Afterward, the limitations and managerial implications are presented.

Chapter 1: Introduction

Over the past century, acquisitions have emerged as an eminent topic in strategic management research (Cartwright & Schoenberg, 2006; Nahavandi & Malekzadeh, 1994). Acquisitions are corporate activities that bring together two formerly independent firms, resulting in a new corporate structure (Coyle, 2000; Hubbard, 1999). In addition, acquisitions enable firms to alter their resources and capabilities to adapt to changing environments (Barney, 1991; Schoenberg, 2003; Teece, 2007). Thus, research shows that alterations in the resource base through acquisitions enable firms to become more resilient, increasing their survivability (Almor et al., 2014). Further, acquisitions have been identified as the most important strategic tool for multinational corporations to grow (Hitt, Harrison, Ireland, 2001), allowing firms to improve their performance (Laamanen, Keil, 2008).

However, despite these promises to deploy acquisitions to exploit strategic opportunities, develop corporate activities, and create value (Bower, 2001), prior research has persistently reported that acquisition failure rates range from 40% to 60% (Homburg & Bucerius, 2005,2006; Almor et al., 2014; Hitt, Harrison & Ireland, 2001; Papadakis & Thanos, 2010; Schoenberg, 2006). Further, research findings show that 90% of all transactions, after the deal closes, fail to achieve the prospected value (Christensen et al., 2011). Despite the disappointing outcomes of acquisitions (Tuch & Sullivan,

2007), their popularity has resulted in an overall increase in acquisition activities over the past decades (Wiggins et al., 2022). Cording and colleagues (2002) labeled this dichotomy between the strategic importance of acquisitions and subsequent negative results the acquisition paradox. The challenge to explain this phenomenon coherently led to multiple scientific debates, contributing to a more in-depth understanding of acquisitions. As a result, the theoretical body of acquisition literature diverged into multiple lenses to tackle this paradox. For example, Bauer and Matzler (2014) pointed out that four different schools of thought emerged, giving researchers multiple perspectives to understand the acquisition phenomenon: the financial economics school, strategic management school, organizational behavior school, and process school of thought.

Moreover, several influential reviews emerged, broadening our understanding of acquisitions. Graebner et al. (2004) and Devers and colleagues (2020) reviewed the post-merger integration literature, providing an overview of the various streams contributing to the acquisition integration literature. Haleblian et al., (2009) developed a framework to contextualize empirical evidence of the management, economics, and finance school. Further, findings were categorized into a framework of antecedence, contextual settings, and outcome variables. Welch et al., (2020) reconnected the financial, accounting, and economic literature to focus more on the pre-deal phase by explicitly emphasizing deal initiation, target selection, bidding, negotiation, valuation, and announcement phase. Additionally, King et al., (2021) offered a comprehensive review of variables affecting acquisition performance. As a result, the review identified 16 constructs that serve as predictors for acquisition performance, ranging from payment methods to integration depth. Thus, prior research findings on acquisitions contributed to extensive research over the past decades, enabling researchers to improve their understanding of the

phenomenon. Consequently, achievements of past studies decreased ambiguity on causations (Cording et al., 2008; King et al., 2021), reduced the complexity of the topic (Meglio & Risberg, 2010; Trichterborn et al., 2016, Steigenberger, 2017, Weber & Tarba, 2010), and explained heterogeneity of performance effects (Gomez et al., 2012; Meglio & Risberg, 2011, Zollo & Meier, 2008, Das & Kapil, 2012).

Despite these achievements, the topic of acquisitions offers various research opportunities by going beyond traditional determinants that are treated as unrelated variables by each school of thought. For example, while the process school of thought stressed the importance of singular integration tasks (human and functional integration), only limited research integrated an organizational-behavioral perspective to shed light on acquisition integration (Bingham et al., 2010). By directly combining multiple schools of thought, new light can be shed on aspects that have been neglected but are critical for value creation in acquisitions. As a result, this dissertation aims to contribute to acquisition research in the following ways.

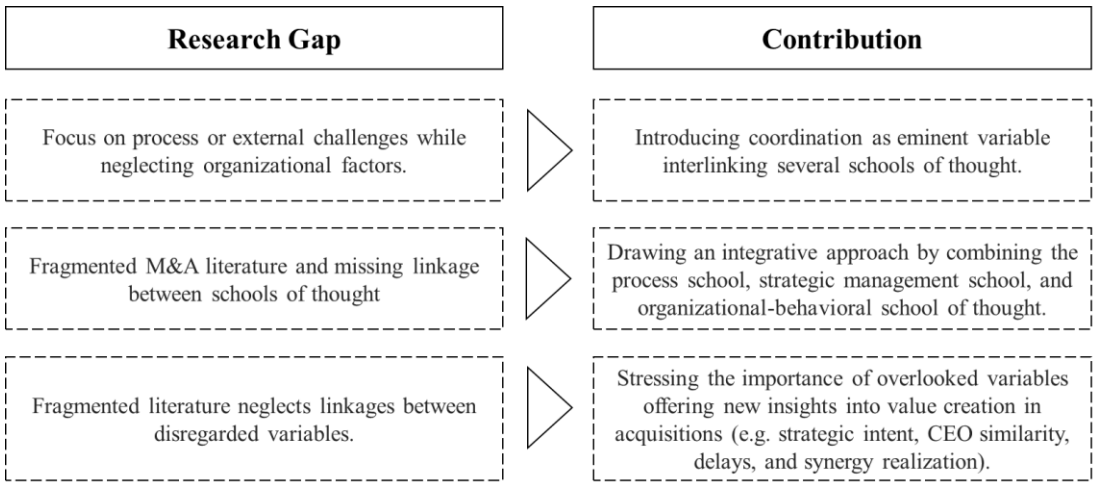

Figure 2: Research gaps and contributions

This dissertation contributes to existing research in three primary ways. First, the dissertation contributes to prior coordination literature by offering a holistic coordination perspective linking three empirical studies that identify coordination as an eminent topic

for acquisitions. Thus, the thesis offers an overarching theme linking three distinctive variables: strategic intent, managerial knowledge orchestration, and the coordination of CEO personality. Second, the dissertation offers an integrative approach to multiple schools of thought in acquisitions, such as the acquisition process school, strategic management, and organizational-behavioral school of thought. Third, the academic work sheds light on neglected variables that offer new insights into acquisition integration and CEO personality, affecting value creation in acquisitions. As a result, while previous research stressed the importance of variables such as cash payment (King et al., 2021) or codification (Zollo, 2009) as essential determinants of acquisition success, only limited or recent research focused on the variables presented in this dissertation. Therefore, an emphasis on variables that received limited foci over the past decades are introduced, such as synergy realization, CEO similarity, strategic M&A intent, and delays.

The dissertation offers new insights by interlinking three unique contributions that expand our knowledge of value creation in corporate takeovers. In addition, it is essential to note that only through research, which goes beyond traditional barriers of scientific domains, complex and rare strategic events such as acquisitions can be made comprehensible. Thus, I firmly propose that research on acquisitions will continue to provide intriguing results by specializing in unique domains and interlinking findings into an overarching concept. Thus, this dissertation (1) interlinks multiple schools of thought, (2) addresses neglected variables, and (3) interlinks them in an overarching coordination theme to support this proposition.

Chapter 2: Theoretical Background

Each paper's theoretical themes and foundations are discussed in the following chapter. Moreover, this chapter provides a comprehensive theoretical background by highlighting the linkage between the coordination and acquisition literature. After laying down the theoretical background, theoretical research gaps are identified and addressed.

Strategic Intent As Coordination Devices In Acquisitions

Coordination is a pivotal concept for firms to improve performance (Faraj & Xiao, 2006) by aligning and orchestrating a collective set of interdependent tasks (Argote, 1982; Malone & Crowston, 1994; Bingham & Eisenhardt, 2011; Thompson, 1967; Okhuysen & Bechky, 2009). As a result, coordination is a crucial instrument for managers to manage firms and acquisitions more effectively (Bauer et al., 2017; Dao & Strobl, 2019; Puranam et al., 2006; Puranam et al., 2009). This relationship between coordination and acquisitions holds especially for the pre-deal and post-merger integration phases. For example, in the case of the pre-deal phase, M&A functions serve as a vital coordination mechanism to improve acquisition performance (Trichterborn et al., 2016). Moreover, prior research identified that the most crucial phase for acquisitions performance (Larsson & Finkelstein, 1999), the post-merger integration phase is heavily reliant on communication (Bansal & King, 2020). Communication as a coordination device in acquisition integration reconfigures resources and enables organizational learning, improving acquisition performance (Agarwal et al., 2012).

However, communication alone does not provide the substance for acquisition success, as the interlinkage between goals, communication, and a strategic direction is essential (Mantere & Sillince, 2007). Thus, to coordinate acquisitions more effectively, a strategic intent is paramount, combining essential elements of coordination such as goals, direction, and communication (Uhlenbruck & & De Castro, 1998). Hamel and Prahalad (1989, p. 64) defined *strategic intent* as "an obsession with winning at all levels of the organization." While this definition was created to serve a managerial audience (Prahalad & Doz, 1987), the concept has been taken up in the academic debate, contributing to the organizational strategy literature (Burgelman 1996; Lovas & Ghoshal, 2000; Mantere & Sillince, 2007; Noda & Bower, 1996). For example, Mantere and Sillince (2007) reported how multiple intents can be aligned throughout an organization to improve coordination. Further, Mariadoss et al., (2014) investigated the relationship between a strategic intent and risk aversion affecting firm performance.

In addition, top strategic management scholars appraised the concept as one of the most influential and innovative concepts that emerged in management literature over the past 100 years (Porter et al., 2022). A strategic intent introduces an element of agency to coordination through strategizing by complementing prior coordination concepts. While previous research focused on structural elements of coordination such as plans and rules (March & Simon, 1958; Scott & Davis, 2007), objectives (Rafaeli & Vilnai-Yafetz, 2004; Mark, 2002), and routines (Feldman, 2000; Feldman & Rafaeli, 2002; Bohmer & Pisano, 2001), a strategic intent facilitate the proposition of agency by highlighting the importance of individual aspiration.

Moreover, a strategic intent offers additional benefits for organizations that might result in superior coordination. First, a strategic intent allows organizations to go beyond

the objectives of strategic plans by representing a proactive mode that symbolizes an organizational will about the future (Hamel & Prahalad, 1989). Second, a strategic intent allows organizations to adapt to changing objectives for which one cannot plan (Hamel & Prahalad, 1989) through a corporate context, allowing bottom-up initiatives to weigh opportunities (Lovas & Ghoshal, 2000; Noda & Bower, 1996) and directing the necessary competencies (Hamel & Prahalad, 1989). Third, a strategic intent reaches all levels of the organization by disseminating a mutual target to aim for (Lovas & Ghoshal, 2000); therefore, energizing all levels of the organization. Combining these three ideas, a strategic intent can be considered a coordination device that provides a context to motivate and guide employee interactions on work tasks more effectively. As a result, a strategic intent provides an organization-wide direction for the decentralized tasks of acquisition integration, determining resource allocation patterns and the use of competencies (Doz, Hamel & Prahalad, 1989; Mariadoss, Johnson & Martin, 2014).

However, despite the importance of a strategic intent for firms, Alan et al., (1994) pointed out that many firms still find it difficult to successfully implement and maintain a strategic intent, in their operational practices. One reason why firms find it difficult to successfully implement a strategic intent is due to past experiences, which alter the strategic intentions and, therefore, change how organizations coordinate and deploy resources successfully (Chen & Yeh, 2012; Fathei & Englis, 2012). Thus, it is crucial to delineate the relationship between what organizations learn, apply, and coordinate through a strategic intent. As a result, the first contribution of the paper-based dissertation is to disentangle the relationship between a strategic intent and organizational learning, affecting the overall performance of acquisitions. While firms find it challenging to implement a strategic intent, we find evidence that a strong strategic intent alters which learnings are applied. Here, acquisition integration provides an ideal setting for the study,

as previous research indicated that organizational learning and its subsequent application play a decisive role in contributing to acquisition success (Zollo, 2009; Heimeriks et al., 2012). Furthermore, the paper combines the process-school and organizational behavior school of thought to give insights into how organizations learn, apply, and, most importantly, coordinate acquisition integration through a strategic intent.

Paper 1: Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions

Knowledge Orchestration And Acquisition Integration

Research reports that knowledge is essential for coordination in organizations (Kanawattanachai & Yoo, 2007). As a result, an extensive body of literature focuses on knowledge as a unique determinant to coordinate groups and organizations (Grant, 1996; Amayah, 2013; Subramaniam & Venkatraman, 2001). In the case of organizations, the knowledge-based view (KBV) provides essential insights into the deployment and coordination of knowledge to achieve competitive advantages. For example, a central argument of the KBV is that organizations incorporate and combine distributed knowledge to leverage productivity in firms (Grant, 1996). As a result, the coordination of knowledge enables firms to create value, heterogeneity, and competitive advantages (Barney, 1991; Grant, 1996; Kogut & Zander, 1992). In particular, the orchestration of knowledge is vital as the orchestration of specific knowledge types, namely specialized or generalized knowledge, allows firms to impact performance on individual and organizational levels (Coff, 1997; Ferguson & Hasan, 2013; Miller, Zhao, & Calantone, 2006; Nyberg & Wright, 2015).

However, while the coordination of knowledge is an essential factor for firm performance (Bierly & Chakrabarti, 1996), knowledge and its underlying attributes are also interconnected with varying effects of speed in firms, indirectly affecting performance (Forbes, 2005). For example, Kogut and Zander (1995) pointed out that specific attributes of knowledge such as tacitness and complexity slow down organizational processes. On the contrary, knowledge attributes such as source attractiveness, the intent to learn, and relational quality increase processes speed (Pérez-Nordtvedt et al., 2008). As a result, the distinction and coordination of different knowledge types and their attributes is an essential factor for successful knowledge orchestration (Arend et al., 2014) and process management.

The appropriate orchestration of knowledge is essential for processes, such as acquisition integration, that are sensitive to speed (Bauer et al., 2016; Homburg & Bucerius, 2006). For instance, delays in acquisition integration can lead to value destruction and hinder synergy realization (Chanmugam et al., 2005). Therefore, managers might implement measures to salvage delayed acquisition integration processes (Teerikangas, Véry, & Pisano, 2011) through appropriate knowledge orchestration. Indeed, recent research shows that different types of knowledge during integration alter the outcome of acquisition (Lamont et al., 2019). Thus, to shed more light on the relationship between knowledge coordination and speed in acquisitions, the second study of the paper-based dissertation disentangles the relationship between delays in acquisition integration and knowledge orchestration and shows how this affects acquisition performance. Moreover, the paper contributes to recent literature by combining different schools of thought, namely the process school and strategic management school to offer new insights into the importance of knowledge orchestration for acquisition integration.

Paper 2: How To Get Back On Track During Acquisition Integration – The Importance of M&A Specialists and M&A Generalists

CEO Personality Similarity And Orchestration

Prior research of the Resource-Based View (RBV) focused on the need to orchestrate resources (Sirmon et al., 2011) and knowledge (Bierly & Chakrabarti, 1996) to achieve competitive advantages. Research on resource orchestration complements prior RBV literature to understand the role of managers and their actions to effectively arrange and bundle resources to leverage firms' resources (Harris & Helfat, 2007; Sirmon et al., 2011). The orchestration of resources and knowledge allowed the deployment and configuration of assets to environmental contexts (Bierly & Chakrabarti, 1996) or corporate activities by the TMT to effectively improve performance (Chadwick et al., 2015). For example, Chadwick et al., (2015) reported that the synchronization of CEOs, top management teams, and middle managers allowed firms to orchestrate strategic resources more effectively. Further, research on family firms investigated the interplay of coordination mechanism and participative strategy to increase generations' involvement, improving firm performance (Chirico et al., 2011).

However, despite the promising empirical work of the orchestration framework (Sirmon & Hitt, 2009), only limited research focused on the orchestration of psychological metrics such as CEO characteristics through an orchestration lens. For example, research by Roth (1995) provided evidence that the appropriate orchestration of CEO characteristics such as locus of control, information evaluation style, and international experience affects firm performance. However, despite the importance of

coordinating these characteristics and recent calls by researchers for the need for a CEO orchestration lens (Kor & Mesko, 2013; Chadwick et al., 2015), findings are still limited in conceptualizing or empirically testing frameworks that coordinate or cluster CEO characteristics.

Therefore, the third study of this dissertation delineates between acquirer and target CEO similarity. This contribution is essential as it sheds light on the relation between CEO similarity and strategic firm behavior, offering evidence on the suboptimal orchestration of CEO characteristics. Further, the findings contribute to acquisition research by revealing new insights on the effects of upper echelon individuals and their similarity affecting acquisitions outcomes.

Paper 3: False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Wealth

Chapter 3: Methodology

This chapter offers an overview of the methodological choices taken in the dissertation. Moreover, methodological limitations are addressed, and an outline is given covering the variables, sample sizes, theoretical perspective, and past conference presentations.

This dissertation applied quantitative research methods. The three papers apply a variety of different quantitative approaches. For the first and second study, primary survey data was collected, allowing for a more detailed and nuanced understanding of the mechanisms of acquisition integration (Zaheer et al., 2013). However, the shortcomings of primary data collection also have to be noted, which are addressed in the following section. Secondary data was also collected for the first study to validate the performance measurement. Study three combined secondary databases, such as Compustat for financial data, Thompson Reuter for acquisition data, and CEO personality data from publicly available videos. CEO personality was measured based on a novel multi-modal machine learning approach. All research papers applied either variance-based structural equation modeling, using SmartPLS (Ringe, Wende & Will, 2005), or ordinary least square (OLS) regression analysis, including moderating variables (Baron & Kenny, 1986; Dawson, 2014).

Despite the advantages of primary data collection displays, several weaknesses might limit the implications of the results. Therefore, several issues that might occur have to be addressed. First, in the case of primary data, external and internal validity might impose limitations. External validity refers to whether results can be generalized and applied beyond the specific research setting collected results. Here, several biases might

limit generalizability, such as non-sampling bias (Henry, 1998), late- or non-response bias (Armstrong & Overton, 1977), item non-response bias (Berdie & Anderson, 1976), and stroke bias (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Additionally, internal validity refers to the extent to which results represent the reality of the sample and are not skewed due to methodological errors. Here, two biases have caused notable concern in primary survey research, common method bias (Podsakoff & Organ, 1986) and key informant bias (Podsakoff et al., 2003). As a result, how validity issues affect the individual studies is discussed in each paper individually.

In the case of the third study using secondary data, issues such as autocorrelation, heteroscedasticity, and multicollinearity have to be addressed. As a result, several post-estimation tests can be applied to ensure robustness. For example, results can be tested for autocorrelation, heteroscedasticity (Andrews, 1991), and the Hausman test for fixed variables in panel data to test for endogenous regressors (Arellano, 1993). However, depending on the specifications and demands of the journal target or conference, and progress of the research, paper three addresses only some of the tests discussed above. The following table provides an overview of the studies, including the collection year, central constructs, and sample size.

Title	**Year**	**Acquisition completed between**	**Central constructs / Issues of interest**	**Basic population / sample**
Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions	2017	2011 and 2016	• Human and functional integration • Organizational learning (routines and codification) • Strategic intent • M&A performance	1065 / 113
How To Get Back On Track During Acquisition Integration – The Importance of M&A Specialists and M&A Generalists	2018	2008 and 2018	• Human and functional integration • Cost and revenue synergies • M&A generalist and specialist	1065 /154

			• M&A performance	
False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Value	2021	2009 and 2020	• CEO personality similarity • Acquisition premium • Industry relatedness	826/ 216

Table 1: Data used for dissertation studies

For Paper 1 ("Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions"), data from the year 2017 were used- For Paper 2 ("How To Get Back On Track During Acquisition Integration – the Importance of M&A Specialists and M&A Generalists") data from the year, 2018 was used. Finally, for Paper 3 ("False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Value"), data collected in 2021 was used.

No.	Titles	Authors	Research topics	Theoretical perspectives	Conferences
1	Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions	Yves-Martin Felker Florian Bauer Martin Friesl	Impact of a strategic M&A intent (coordination devices) on the application of routinized and codified experience in acquisition integration.	Organizational Learning Theory	Academy of Management (presented) European Academy of Management (presented) British Academy of Management (presented)
2	How To Get Back On Track During Acquisition Integration – The Importance of M&A Specialists and M&A Generalists	Yves-Martin Felker Florian Bauer Martin Friesl Duncan Angwin Maureen Meadow	Delays in acquisition integration and synergy realization are interrelated. Knowledge orchestration of managerial knowledge allows organizations to mitigate delays.	Knowledge-Based View (Knowledge Orchestration)	Strategic Management Conference (presented) European Academy of Management (presented)
3	False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Value	Yves-Martin Felker	Similarity between acquirer and target CEOs` personality affect acquisition premiums.	Upper Echelons Theory	3rd AI and Strategy Consortium

Table 2: Overview of studies

Chapter4: Overview of studies

In the following chapter, each paper of the dissertation is summarized. Each section starts with an introduction, outlining the variables and findings. Afterward, the contributions of each paper are discussed. The overview aims to provide a short analysis of each paper's most important findings and contributions, allowing for a concise outline.

Paper 1: Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions

Authors: Yves-Martin Felker, Florian Bauer, Martin Friesl

This study takes an integrative perspective on organizational learning, delineating between learning and subsequent application in acquisition integration. Further, by disentangling what organizations learn through codification and routinization and apply in acquisitions, we identify that a strategic M&A intent is a crucial coordination device. Our findings show that a strategic M&A intent coordinates the application of past learnings. More specifically, by examining the effects of a strategic M&A intent on knowledge application, we find its implications for M&A performance.

We adopted a perspective connecting the relationships of learning mechanisms (what is learned), how these are applied (what is applied), and coordinated (where do we want to go). First, we focus on codification and routinization in the case of what is learned. While codification is a complex learning process that guides managers by revealing action-performance relationships, it might also lead to organizational inertia,

reducing organizational adaptability (Weber, 1930; Schulz 1998). In addition, codification might result in rigidity and generalization errors (Zollo, 2009; Heimeriks et al., 2012). As a result, routines can be introduced to balance out the shortcomings of codification. Here, routines adapt to changing task requirements through the variation of agents partaking in the tasks (Feldman, 2000). This variation of agents is evident in acquisition integration, which is characterized as temporal projects in which multiple agents come together. Thus, we argue that firms deploy both codification and routinization to manage acquisition integration successfully.

Second, we focus on how rule application is applied. We propose that rule application in integration positively affects performance and results from applied learnings. Rules are beneficial for firms and contribute to increased performance effects, such as an increased firm or employee performance. Gary and Wood (2011) observed that rules improve decision-making in uncertain business environments and increase firm performance. Additionally, rules improve organization goal setting, leading to improved employee performance (Squires & Wilders, 2010).

Third, we focus on a strategic M&A in the case of where do we want to go. Prior research, which discussed the need in acquisition integration to align actions towards a shared vision and goal requirement through coordination (Mantere & Sillince, 2007), we identify a strategic M&A intent as a crucial coordination mechanism. The effects of a strategic intent span across the entire organization and involve both bottom-up and top-down approaches to strategy making (Lovas & Ghoshal, 2000; Noda & Bower, 1996). Thus, the process of what is learned and how it is applied is contingent on stringent actions towards a common strategic intent (Hamel & Prahalad, 1989). Simply, the

combination of routines, codification, and a strategic M&A intent impact acquisition performance.

We tested our hypothesis theoretical model with primary data collected in spring 2017 and secondary data to validate the acquisition performance measurement. Our sample comprised 113 completed surveys by key informants, such as CEO, acquisition managers, or employees actively involved in the acquisitions.

Our findings contribute to codification and routinization literature and to acquisition integration in the following ways. First, in contrast to previous research that traditionally focused only on distinct learning mechanisms, such as codification (Heimeriks et al., 2012; Zollo, 2009) or routinization (Angwin et al., 2018), we show that multiple learning mechanisms coexist. This coexistence matters as firms apply codification and routines to counterbalance the negative effects of each one and combine their mutual strengths. As a result, we give empirical evidence on codification and routinization, resulting in the application of rule in human and functional integration.

Second, we follow the argument of Vermeulen and Barkema, (2001) who discuss the importance of research that unravels what organizations learn and how they apply it. We go beyond traditional variables of organizational learning theory, focusing only on the direct linkage between learning and performance, by introducing rules as a relevant measure to observe the effects of past learnings.

Third, strategy research increasingly highlights the role of a strategic intent for various domains, for example, how firms build on capabilities or form alliances (Edelman et al., 2005; Hamel & Prahalad, 1996). Without a clear direction, the gravitational forces of these interrelated decisions endanger coherence and, thus,

outcomes of acquisitions. A strategic M&A intent channels a complex array of sequential and interrelated decisions, triggering the effect of codification and its subsequent application. Contrary, the channeling effect of a strategic M&A intent limits space for ad hoc and case-by-case maneuvers necessary to react to unforeseeable events. We show this in the context of acquisition research, but similar effects have been shown for resource allocation patterns in strategy development (Burgelman, 1983, 2002).

The combined results suggest that the application of lessons learned should receive more scholarly attention in the context of acquisitions. We also show that a strategic M&A intent really matters, as it orchestrates "what is learned" and "how it is applied." We hope that our study stimulates further research on applied learnings and coordination in the context of acquisitions.

Paper 2: How To Get Back On Track During Acquisition Integration – The Importance of M&A Specialists and M&A Generalists

Authors: Yves-Martin Felker, Florian Bauer, Martin Friesl, Duncan Angwin, Maureen Meadow

This study provides evidence that delays in acquisition integration influence synergy realization, but these delays can be mitigated through managerial knowledge orchestration. Further, we show that knowledge orchestration is crucial since managerial knowledge can be detrimental and beneficial to realizing acquisition integration synergies. Here, M&A specialists and generalists are relevant to affecting delays and contributing to acquisition performance indirectly. Therefore, managers in acquisitions must consider an appropriate fit between the effects of knowledge attributes and their effects on specific tasks that enable successful acquisition integration and synergy realization.

Drawing on the knowledge-based view (Grant, 1996: Barney, 1991: Kogut & Zander, 1992; Felin & Hesterly, 2007), we argue that knowledge orchestration is crucial to mitigate delays in organizational processes, especially in acquisition integration. Previous research identified that knowledge and its attributes are influential factors, decreasing or increasing the speed of processes in organizations (Kogut & Zander, 1995; McEvily & Chakravarthy, 2002). Further, different levels of education, training, and experience form knowledge specialization or generalization and impact performance on individual and organizational levels (Coff, 1997; Ferguson & Hasan, 2013; Miller, Zhao, & Calantone, 2006; Nyberg & Wright, 2015). Therefore, we investigated the effects of two M&A manager types, namely M&A specialists and generalists, to better understand how different types of knowledge affect delays in acquisition integration. Both managers

have different knowledge backgrounds and offer different knowledge attributes, influencing acquisition integration differently.

To test our theoretical model, we collected primary data in spring 2018. Our sample comprised 154 responses from senior executives to acquisition consultants. We chose contacts based on a database of a UK professional institute, offering comprehensive and recent information on acquisition practitioners. Moreover, our sample consists primarily of companies that generated turnover above 1 billion pounds per year and employed more than 1000 people.

Our results intend to contribute to research in three primary ways. First, the study provides evidence of the positive effects of knowledge orchestration to mitigate delays in acquisition integration. While delays and their effects on organizations had been previously discussed through a behavioral and learning lens (Luoma et al., 2017; Gans, Hsu & Stern, 2008; Rahmandad & Gary, 2020; Rahmandad, 2008; Elfenbein & Knott, 2015), only limited research applied the knowledge-based view and knowledge orchestration lens in particular to understand the relationship between knowledge and delays. Therefore, the study provides evidence on how different types of managerial knowledge, namely M&A specialists and generalists, affect delays in acquisition integration.

Second, the second study contributes to the topic of synergies, a theme that has recently received increasingly more attention in the strategic management literature (Feldman & Hernandez, 2020; Bauer & Friesl, 2022; Puranam & Vanneste, 2016). As a result, the dissertation delineates between cost and revenue-enhancing synergies to shed light on synergy attributes and their sensitivity to delays and managerial knowledge. Thus, the study reports on different synergy sensitivities due to different synergy

lifecycles and time scales. This contribution is vital as it provides the needed empirical evidence, complementing the conceptual work by Hernandez and Feldman (2020).

Third, the second study of the dissertation contributes to the ongoing discussion on the effects of knowledge on organizational speed. Prior research findings showed that knowledge attributes increase or decrease the speed of processes (Kogut & Zander, 1995, Zahra et al., 2000). However, despite these advancements, only limited attention was given to the importance of knowledge orchestration, influencing process speed and performance. As a result, the dissertation complements prior research on the knowledge to speed relationship by providing evidence that the management of knowledge attributes and their orchestration is equally essential to altering the speed of organizational processes.

Paper 3: False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Wealth

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Based on a novel multi-modal machine learning method, I provide evidence that CEO personality similarity between acquirer and target CEOs affects acquisition premiums positively. This study contributes to the emerging literature on CEO dyadic interactions in the upper echelons theory by considering how acquirer and target CEOs' personalities influence acquisition outcomes.

Acquisition premiums serve as indicators to determine value-destroying behavior or low-quality decision-making in the case of acquisition (Malmendier & Tate, 2008). Hayward and Hambrick (1997) argue that acquisition premiums serve as primary sources to measure the destruction of shareholder wealth. Further, previous research findings identified that acquisition premiums are affected by CEO narcissism (Chatterjee & Hambrick, 2011), hubris (Hayward & Hambrick, 1997), and CEO power (Fralich & Papadopoulos, 2018). As a result, CEO characteristics such as personality are decisive in altering acquisition outcomes(Meyer-Doyle et al., 2019; Pavicevic & Keil; Malhotra et al., 2017; Stephan et al., 2003; Gamache et la., 2015; Malhotra et al., 2018; Kirca et al., 2012; Shi et al.,2016). However, despite these advancements in the upper echelons theory, only little focus was given to the dyadic relationship between CEOs and their peers. Only recent research introduced the appropriate methodical (Harrison & Klein, 2007) or theoretical contributions (Aktas et al., 2016; Shi et al., 2019; Buchholtz et al., 2003), shedding light on how CEO characteristics and especially CEO personality interactions between multiple individuals affect firms. Here, the interaction between acquirer and target CEOs is critical, as both CEOs are involved in intense negotiations

and possess the authority to accept or revoke an acquisition. Thus, to shed more light on the importance of CEO similarity between acquirer and target CEOs, the study provides evidence on the negative relationship between CEO similarities and acquisition premiums.

To test this relationship, I collected publicly available video data for 236 unique CEOs of S&P500 listed companies engaged in acquisitions from 2009 to 2020. I applied a multi-modal machine learning method to extract data from spoken, facial, and gestures to predict the personality of CEOs. This novel machine learning method complements previous machine learning methods applied in strategic management studies (Choudbury et al., 2019; Harrison et al., 2020) by improving personality measurement accuracy. Accuracy rates range from 81.3% to 91.7% (Kindiroglu et al., 2017; Gucluturk et al., 2017) when measuring the personality of individuals in the case of multi-modal machine learning methods, compared to univariate machine learning methods with accuracy rates ranging from 57.99% in case of text or 64.84% in case of audio data (Majumder et al., 2017; Valente et al., 2012).

The results intend to contribute to research in two primary ways. First, the thesis provides evidence of the detrimental effects between CEO personality similarity and shareholder wealth. While extensive research discussed the positive effects of similarity between CEOs promoting collaboration (O'Reilly, Snyder, & Boothe, 1993; Wagner, Pfeffer & O'Reilly, 1984) and trust building (Huang & Iun, 2006), only a few studies have investigated the negative effects of CEO similarity for strategic processes such as acquisitions. As a result, the study contributes to recent literature stressing the importance of dyadic relations in the upper echelons of firms by delineating between acquirer and target CEOs and their effects on acquisition premiums. These findings offer new insights

on the interlinkages between CEO and peer similarity in personality that jointly affect a firm's strategic behavior.

Moreover, the dissertation provides a methodical contribution by introducing a novel multi-modal machine learning method to the strategic management literature and upper echelons literature. While prior research applied uni-modal machine learning methods to measure the personality of CEOs (Choudhury et al., 2019; Harrison et al., 2020), this study applies a multi-modal machine learning method that extracts personality insights from spoken, facial and gesture data, resulting in an improved personality detection (Gucluturk et al., 2017; Kindiroglu et al., 2017).

Chapter 5: Contributions and Implications

The following chapter discusses the contributions, managerial implications, and limitations of the dissertation. The theory and literature contributions are divided into three sections. Afterward, the research limitations are outlined. Lastly, I will point out relevant insights for managers that support acquisition management. The results of the studies might lead to different managerial conducts that improve value creation in acquisitions.

The dissertation offers new insights into coordination mechanisms affecting acquisitions. The research on the accumulation of experience and knowledge has contributed to a better understanding on how organizations learn and improve the management of acquisitions (Trichterborn et al., 2016; Zollo, 2009: Heimeriks et al.,2012; Zollo & Winter, 2002). However, despite this acknowledgment, it is to argue that not only the accumulation but also appropriate and effective coordination of accumulated experience is important. The coordination of experience (Bauer et al., 2017), knowledge (Dao & Strobl, 2019), and CEO characteristics (Aktas et al., 2016) have become important determinants of acquisition success. To build upon past findings and extend our knowledge on coordination in acquisitions, the dissertation focuses on a strategic M&A intent (Rui & Yip, 2008), knowledge orchestration (Bierly & Chakrabarti, 1996), and CEO similarity (Kor & Mesko, 2013) as pertinent coordination devices affecting acquisitions. Further, each coordination construct (strategic intent, knowledge orchestration, CEO similarity) is paired with its comparable coordination literature stream to clarify potential contributions more concisely. As a result, the dissertation contributes to three unique literature streams in the research field of coordination—

namely, the organizational-coordination, process-coordination, and a CEO characteristics-orchestration lens.

The following section discusses the three research streams and the dissertation contributions in more detail. Here is to note that the three described labels (organizational-coordination, process-coordination, and a CEO characteristics-orchestration lens) are novel and therefore introduced at the beginning of each section.

Coordination lenses	Concept characteristics	Prominent literature	Dissertation contribution
Organizational-coordination lens	Focus on macro-level coordination devices that directly affect firm performance and firm behaviour. Broad generalization of coordination mechanisms. (Mostly quantitative)	Fitz et al., 1998; Kleinbaum et al., 2008; Kogut & Zander, 1996; Cheng, 1983; Love et al., 2002; Aggarwal et al., 2010	A strategic M&A intent affects acquisition performance. A strategic intent affects the application of learning.
Process-coordination lens	Focus on micro-level constructs that facilitate coordination in specific processes. Detailed investigation of the relationship between micro-level constructs and their effect on coordination. (Mostly qualitative)	Bechky & Okhuysen, 2011; Mark, 2002; Ballard & Seibold, 2003; Kellog et al., 2006; Klein et al., 2006; Faraj & Xiao, 2006	Specific knowledge types affect delayed integration processes.
CEO characteristics-orchestration lens	Firms are affected by CEO characteristics. As a result, the orchestration of CEO characteristics is essential in guiding firm behaviour and outcomes. (Mostly quantitative)	Kor & Mesko, 2013; Georgakakis & Ruigrok, 2017; Belliveau & O´Reilly, 1996; Herrmann & Nadkarni, 2014;	CEO similarity between acquire and target CEOs destroy shareholder wealth.

Table 3: Contributions to coordination literature

Contributions To Organizational-Coordination Lens

The dissertation contributes to prior coordination literature by broadening our understanding of the effects of specific coordination devices in firms. The organizational-coordination lens focuses on disentangling relationships between coordination devices and firm performance (Darroch, 2005; Mom & Van den Bosch, 2009). As such, research reported on coordination devices such as communication (Fitz et al., 1998; Kleinbaum et al., 2008; Kogut & Zander, 1996), internal-organizational distance or proximity (Cheng,

1983, Love et al., 2002), and governance mechanisms, improving firm performance (Aggarwal et al., 2011). Further, a clear distinction of this lens compared to others is that the foci of the organizational-coordination lens are on a macro level or organizational level constructs.

The dissertation offers new insights on the effects of a strategic M&A intent serving as a coordination device, regulating the application of past learnings. This finding contributes to theory and enhances scholarly knowledge in several ways. For example, in contracts to previous research that focused mainly on a single construct of learning in firms, such as routinization (Basuil & Datta, 2015; Lazaric & Denis, 2005), or codification (Heimeriks et al., 2012; Zollo & Winter, 2002), the study provides new insights on how multiple concepts of experience coexist and are coordinated within firms. This distinction is crucial as it contributes to a comprehensive understanding on the complex ecology of knowledge within a firm (Becker, 2007; Friesl et al., 2011) and how it is coordinated.

The results also contribute to the ongoing debate discussing the relationship between coordination and organizational learning. Prior research revealed that organizational experience in exploration or exploitation strategies alters a firm's strategic intent (Fatehi & Englis, 2012). In addition, Fang & Chen, 2016 reported that accumulated experience from different market environments, namely stable or fast-changing markets influence a firm's strategic intent. Interestingly, the results of this dissertation complement previous findings by providing evidence that a strategic M&A intent is not only dependent and altered by organizational experience but also a vital element in choosing which experiences are applied in organizations. This finding is important as it

highlights the reciprocal mechanism between a strategic intent and experience accumulation.

For example, while a strategic intent is developed and influenced by past experiences it also coordinates which experiences are applied. Thus, these findings complement prior research by pointing toward the closely interlinked, interacting, and mutually dependent relationships between coordination and organizational learning. Thus, the dissertation contributes to the organizational coordination lens by disentangling the relationship between coordination and organization learning in firms.

Contributions To Process-Coordination Lens

Moreover, the dissertation contributes to the process-coordination lens by offering evidence on the relationship between knowledge orchestration and organizational processes. While the organizational-coordination lens offers insights into the effects of coordination devices on firms, research findings sometimes lack detailed portrayals of coordination mechanisms. On the contrary, the process-coordination lens offers a more nuanced understanding of the intertwined relationships between coordination and processes. Therefore, offering an improved understanding of the inner works of coordination mechanisms. As such, research by Bechky and Okhuysen (2011) showed that the coordination of task restructuring in unexpected events is enabled through inter-organizational role shifting, reassembling of work, and routine breakups. Furthermore, Mark (2002) provided evidence of NASA engineers using environmental settings such as war-rooms to promote information sharing and team alignment. Additionally, research has found evidence that processes are sensitive to coordination

activities such as temporal mapping of timelines (Ballard & Seibold, 2003), discovery matrixes (Kellog et al., 2006), and roles (Klein et al., 2006; Faraj & Xiao, 2006).

The findings of this dissertation contribute to the process-coordination lens by providing evidence that human and functional integration delays are sensitive to the orchestration of specific knowledge types. For example, by delineating between M&A specialists and M&A generalists, the dissertation highlights managerial knowledge attributes that affect delay. As such, M&A generalists possess extensive knowledge of day-to-day operations and communication skills to manage and coordinate daily operations. This type of knowledge is in stark contracts to M&A specialists, which possess narrow in-depth knowledge, allowing them to build on extensive experience and increased information processing capabilities. Thus, we argue that knowledge types influence managers' capability to coordinate subprocesses more effectively, based on a fit between task characteristics and knowledge attributes. These findings are important as they offer insights into the relationship between specific knowledge attributes (information processing, in-depth knowledge, broader knowledge, effectively communicate) and process characteristics. As a result, the dissertation contributes to the process-coordination lens by providing evidence on the relationship between knowledge attributes that hinder or support the effective mitigation of delays in integration subprocesses.

Contributions To CEO Characteristics-Orchestration Lens

In addition, the dissertation contributes to the CEO characteristics-orchestration lens. The term CEO characteristics-orchestration is a novel term introduced in this

dissertation. The primary definition of this term is based on the understanding that CEO characteristics have a substantial effect on firm outcomes (Hambrick, 2007). As a result, the deployment or redeployment of CEO characteristics might guide and alter a firm's strategic behavior. For example, boards and shareholders, which need to initiate strategic change to overcome maturing markets, might select and promote extraverted CEOs that have been identified to promote strategic change within firms (Herrmann & Nadkarni, 2014).

Prior research has identified that the selection and succession of CEOs have substantial effects on firm performance (Zajac, 1990; Goel & Thakor, 2008; Tian & Haleblian, 2011) and firm survival (Honjo, Kato, 2021). Additionally, CEOs' characteristics are fundamental determinants influencing CEOs' overall selection and succession (Magnusson & Boggs, 2006). Thus, selecting or deploying CEO characteristics allows firms to utilize CEO characteristics influencing firm outcomes. As such, prior research identified relationships between CEO age and R&D spending (Barker & Mueller, 2002), extraversion and strategic change (Herrmann & Nadkarni, 2014), CEO hubris and risk-taking (Li & Tang, 2010), and CEO ideology and downsizing (Gupta et al., 2018). However, despite the importance of coordinating these characteristics and recent calls by researchers for the need for a CEO orchestration lens (Kor & Mesko, 2013), findings are still limited in conceptualizing and empirically testing frameworks that coordinate or cluster CEO characteristics.

Therefore, to advance our understanding on how CEOs' characteristics influence firms, it is essential to link CEO characteristics with firm outcomes and understand the interrelation of CEO characteristics with their social context. As such, recent research provided new evidence that went beyond the traditional variables by focusing on the

similarities or dissimilarities of CEO with top management teams, boards, committees, and other CEOs, affecting firm outcomes. For example, prior research identified that the similarity between CEOs and committees responsible for compensation led to less confined and controlled compensations (Young & Buchholtz, 2002).

These contributions are vital as these advancements offer insights into how CEO characteristics and peers jointly influence firms (Georgakakis & Ruigrok, 2017; Belliveau & O'Reilly, 1996). Moreover, the awareness of these relationships offers firms the opportunity to orchestrate CEO characteristics more effectively to guide firms. Thus, this dissertation analyzes acquirer and target CEO's personality similarity and its effects on acquisitions premiums. The results show that increased CEO similarity in personality between acquirer and target CEOs increase acquisitions premiums. Combined by offering new insights into how CEO similarity affects acquisition outcomes, the dissertation complements prior research findings, contributing to an emerging CEO-orchestration perspective.

Research Limitations

Despite the theoretical and practical contributions, the dissertation is not free of limitations. One primary theoretical concern refers to the disentanglement of codification and routinization. While prior research explicitly focused on codification (Heimeriks et al., 2012, Zollo & Singh, 2004) or routinization (Feldman, 2000; Becker, 2004), we argue that organizations deploy routinization and codification simultaneously. This argument raised broad concern due to the entanglement of both constructs. For example, D'Adderio (2011) and Pentland and Feldman (2005) argued that routinization is an antecedent of

codification. In addition, researchers reported that codification could break and make routines in firms (Becker & Lazaric, 2010, Miller et al., 2012). Thus, the clear distinction between both constructs and their direct effect on integration processes raised concerns in the research community. However, despite this concern, we argue that specific integration processes are influenced and subject to either codification or routinization. For example, acquisition management consists of ambiguous, heterogeneous, and complex (Zollo & Winter, 2002) tasks that vary strongly in their characteristics. Therefore, specific processes tend more to codification in case of due diligence (Nikandrou & Papalexandris, 2007) or routinization when it comes to cultural work in acquisitions (Bertels et al., 2016).

Interestingly, the propensity of human-related vs. object-related tasks determines the propensity to deploy either codification or routinization (Becker et al., 2013). However, while our results confirm this distinction, the uniqueness of acquisition management with specialized tasks limits our results' generalizability. Thus, future research might entangle the propensity of tasks to either codification, routinization, or a combination of both learning mechanisms in other organizational processes such as product development or sales activities.

Moreover, several methodological limitations have to be addressed. All survey data in this dissertation stems from German, Austrian, and Switzerland managers in case of study one or the United Kingdom in case of study two. Therefore, conclusions cannot be transferred to other countries due to intercultural differences (Weber et al., 1996; Slangen, 2006, Vaara et al., 2012). Despite evidence that domestic or cross-border acquisitions are confronted with similar cultural barriers (Reynold & Teerikangas, 2016), future research might extend on cultural differences and challenges acquisition managers

face. In addition, survey-based measures in the context of acquisitions are confronted with conflicts of reliable measurement due to the challenge of recollecting data. While longitudinal approaches might solve this limitation, the lack of willingness and managerial turnover makes this potential solution impractical.

Managerial Implications

The dissertation offers several managerial implications that might be noteworthy for practitioners. First, this dissertation differentiates between the deployment of codification and routinization in acquisition integration. Managers utilize codified experience and routinization to overcome the complexity and uncertainty of acquisition integration. Managers deploy both to help them engage in acquisition related work processes such as human and functional integration. Moreover, managers should be aware that a strategic intent supports the application of formal rules through codification and hinders the effective application of informal rules through routines. Thus, the study offers managers insights into how codification, routinization, and rules affect acquisition integration and stresses the effects of a strategic intent, which promotes codification and lessens routinization.

Second, the results of the second study offer managers insights into the relationship between knowledge types and delay mitigation. Here, managers have to be aware that the orchestration of knowledge, namely specialized or general M&A knowledge, can both increase or mitigate delays. Furthermore, by differentiating between cost and revenue synergies, we provide evidence that synergies are differently sensitive

to knowledge orchestration. As such, cost synergies delays are not salvageable through knowledge orchestration compared to revenue-enhancing synergies.

Third, this dissertation offers managerial insights on CEO characteristics influencing acquisition management. The results indicate that similarity between target and acquirer CEOs increases acquisition premiums. Therefore, M&A managers and boards should be careful when CEO similarity between target and acquirer CEOs is high, especially when the target and acquirer firms are within a related industry. This finding might uphold two governance mechanisms that mitigate the risk of overpayment. Thus, managers should be aware of the risk and introduce measures to control CEO favoritism. Additionally, when creating an acquisition shortlist, targets with increased similarity to the acquiring CEO might be excluded from the list.

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Research Papers

Paper 1: Applied Integration Rules And Performance – What Is Learned, Applied And Intended In Acquisitions

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British Academy of Management, Manchester 2020

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Abstract: Research suggests that acquisition performance improves through routinization and codified experience. Traditionally, acquisition research has drawn a direct link between routinization and performance. However, the question remains how lessons learned are captured in codified experience and routinization and are applied in subsequent events. We argue that codified experience and routinization ("what is learned") are distinct from each other, but are likely deployed jointly via formal and informal rules ("how it is applied"). Combined, we look at the relationship of "what is learned" and "how it is applied" and the consequences of performance. Moreover, we theorize and investigate how a strategic M&A intent influences the relationship of routinization, codified experience and rules in acquisition processes.

Keywords: Merger and Acquisitions, Codification, Routinization, Rules, Integration, Performance

Introduction

There is an intuitive appeal that experience results in better outcomes (Hitt et al., 2001). This is the case as experience can be codified and gives rise to routinization to help manage rare strategic events, such as acquisitions are managed (Angwin, Paroutis & Connell, 2015; Heimeriks, Schijven & Gates, 2012; Zollo & Singh, 2004). Research suggests that acquisition performance improves through codified experience and routinization in activities such as target screening (Al-Laham et al.,2010; Hitt, Hoskisson, Johnson & Moesel, 1996), due diligence but also integration (Nikandrou & Papalexandris, 2007). We also know that codification and routinization emerge and develop through distinct learning processes over time (Rerup & Feldman, 2011; Zollo & Winter, 2002). Indeed, prior acquisition research particularly highlights the role of experiential learning (Trichterborn, Zu Knyphausen-Aufseß & Schweizer, 2016). In line with others, we argue that codification and routinization jointly contribute to the appropriate management of acquisitions and therefore success (Staats et al. 2011; Zollo & Winter, 2002).

Traditionally, acquisition research has directly linked acquisition experience and performance. By focusing on codification and routinization, and therefore considering "what was actually learned", research has opened up the black box of the non-univocal direct accumulated experience and performance relationship. Still, performance effects remain heterogeneous. For instance, there is tentative empirical evidence that codification and/or routinization may influence acquisition performance both positively and negatively. This variance in performance contribution might be due to the characteristics of routinization and codification (Heimeriks et al., 2012; Wright, 2016; Zollo & Singh, 2004). However, the pure availability of routines and codified experience

does not imply that they are actually deployed in different activities along the acquisition process.

In this paper, we argue that the deployment of routinization and codified experience happens by human and functional integration rules. This is a nuanced and important distinction. Rules imply similarity, uniformity, and continuity of behavior and actions (David & Rothwell, 1996), helping firms to navigate through successive acquisitions by applying standardized measures that are captured by routines or codified experience such as manuals, handbooks, or checklists (Zollo, 2009). They bridge the chasm between what has been learned in previous acquisitions and what is actually applied. Combined, we look at the relationship of "what is learned" and "how it is applied" and the consequences on performance.

However, the transfer from experience to application is not automatic and the extent that managers draw on codification or routinization needs to be coordinated. We argue that this codification is accomplished via firms strategic M&A intent. The transformation of "what is learned" into "how it is applied" requires coordination via "where we want to go".

We define strategic M&A intent as the role of acquisitions for strategy execution, involving for instance the importance of organic versus acquisitive growth through structured acquisition programs. A strategic M&A intent provides a coordination mechanism (Srikanth & Puranam, 2011) that links various pockets of knowledge and expertise (Friesl & Larty, 2018; Tsoukas, 1996), and gives managerial action direction and meaning (Okhuysen & Bechky, 2009), allowing firms to deploy effective acquisition management. As such, the "where we want to go" moderates the relationship between "what is learned" and "how it is applied".

To test our ideas, we collected primary data from 113 individual firms that have been active in the market for corporate control from German-speaking countries particularly, focusing on acquisition integration. This focus is adequate as acquisition management is complex by nature but still includes routinization in activities such as HR planning, development and application of organizational blueprints, and regular communication to the workforce. Additionally, acquisition management also requires codified experience in activities such as due diligence, cost cutting and target evaluation. Simply, acquisition integration is "project management at its fullest" (Vester, 2002: 36) and contains aspects such as human and functional integration that require different management (King, Bauer, Weng, Schriber & Tarba, 2020). Therefore, acquisition integration provides an ideal setting for the purpose of this paper.

Combined, we aim to contribute to acquisition experience research in several ways. First, while previous research treated codified experience and routinization as separate (e.g., Heimeriks et al., 2012; Zollo & Singh, 2004; Zollo, 2009), we argue that codified experience and routinization (what is learned) are complementary yet analytic distinct phenomena. By the simultaneous use of both, firms might counterbalance the negative effects of each individual one and combine their strengths. Second, codified experience and routinization capture "what was actually learned", yet the question remains: how are the results actually applied? We argue that codified experience and routinization result in the application of rules, during acquisition integration. Rules give rise to standardized human and functional integration approaches and procedures, aiming to increase performance by reducing complexity and increasing efficiency. Third, we argue that the process of "what was learned" to "how it is applied" is neither free of constraints nor automatic but requires coordination through a strategic M&A intent that provides direction (Okhuysen & Bechky, 2009). However, firms vary concerning their

strategic M&A intent, ranging from clear acquisition programs to opportunistically driven acquisition behaviors (Laamanen & Keil, 2008; Trichterborn et al., 2016). As such, we theorize and investigate how a strategic M&A intent moderates the relationship of routinization and codification on the application of integration rules, jointly contributing to performance.

Theoretical Background

Prior research has built connections between codified experience and routinization and the conduct of acquisition management. In particular, routinization is important in order to cope with the complexity of rare strategic events such as acquisitions, (Zollo & Singh, 2004; Zollo & Winter, 2002) with regularly reported failure rates of up to 60% (Homburg & Bucerius, 2006, 2005). Rare strategic events are characterized by increased task complexity, heterogeneity, and ambiguity (Zollo & Singh, 2004). In this context, research shows that organizations deploy routinization and codification to overcome strategic challenges.

Codification of experience allow firms to extract lessons learned and to understand cause-effect relationships between acquisition-related outcomes and managerial actions (Zollo & Winter, 2002). This is especially important during acquisition integration that is characterized by ambiguity (Cording, Christmann & King, 2008; Vester, 2002). Codified experience enhances managers' understanding of cause-effect relationships as it captures 'know-what' (i.e., presenting content, information, and facts), 'know-how' (i.e., providing procedures and methodology), and 'know-why' (i.e., supporting processes through rational insights, theories and consequences;Foray &

Steinmueller, 2003; Håkanson, 2007; Kale & Singh, 2007). This knowledge may be captured in manuals, blueprints, spreadsheets, decision support systems, and project management software (Zollo & Winter, 2002). Consequently, codified experience, by revealing action-performance relationships and reducing uncertainty, guides managers through ambiguous and complex tasks, supporting them in their decision-making process.

In addition to codification of knowledge, routinization of activities also reduces uncertainty (Schreyogg & Kliesch-Eberl, 2007) and promises efficiency gains (Eisenhardt, Furr & Bingham, 2010). Such benefits are realized by the automation of activities (Bargh & Gollwitzer, 1994) and the increased speed of task performance (Wickens & Hollands, 2000). This is made possible as actors develop a shared and largely embodied understanding of roles and responsibilities required to perform certain tasks (Feldman & Rafaeli, 2002). Consequently, routinized tasks require less conscious effort (Norman & Bobrow, 1975) freeing up managers to deal with non-routine situations (Kanfer & Ackerman, 1989). This is important in tasks related to integration, in which routinization can help managers to navigate through complex processes and help them to orchestrate and tune their activities based on a common understanding.

Based on the above, we argue that routinization and codified experience are distinct, yet mutually complementary phenomena. Therefore, we argue that organizations deploy routinization and codified experience simultaneously to navigate through the challenges of acquisition integration. Their combined application can obtain greater benefits in overcoming potential downsides by combining their strengths (Bingham, Heimeriks, Schijven & Gates, 2015). Each acquisition consists of new ambiguous, heterogeneous, and complex tasks (Zollo & Winter, 2002) making each transaction

unique (Lubatkin, 1987), resulting in the necessity of tailored solutions (King, Dalton, Daily & Covin, 2004).

This is due to changing customer needs, regulatory requirements, and competition (Harzing, 2002; Kole & Lehn, 1999; Öberg, 2014). Nonetheless, acquisitions also show commonalities that require less adaptability and a more uniform application of previous experiences to manage integration efficiently. Indeed, some acquisition integration challenges share similarities across acquisitions and therefore warrant a routinized or codified response (Barkema & Schijven, 2008; Trichterborn et al., 2016; Zollo & Winter, 2002). Thus, the management of acquisitions requires both, codified experience and routinization. Yet, it is not only the "what is learned" through routinization and codified experience that determine success but far more, "what is actually applied ".

Here, rules come into play. We argue that a stock of rules in organizations reflect the application of what was learned (Kieser & Koch, 2002), representing the application of knowledge and experience (March, 1994). Mirroring the characteristics of the underlying practices (codified experience and routinization), rules might be formal or informal, resulting in a combined stock of rules. Rules regulate expectations and influence the behavior of individuals, and interactions among them (March, Schulz & Zhou, 2000). As such, a combined stock of rules affects management and organizational development in general and how organizations integrate acquired firms by more formal or informal means (Puranam, Singh & Chaudhuri, 2009).

The complexity of integration derives from interrelated but distinct processes, namely human and functional integration (King et al., 2020). Human integration focuses on mitigating negative consequences of integration, caused by for example uncertainty about careers and role ambiguity (Ullrich & van Dick, 2007; Vaara, 2003). This is

important as uncertainty about the future may create employee resistance, reducing acquisition performance (Larsson & Finkelstein, 1999). To mitigate these negative effects, human integration aims to contribute to the development of shared identities and increased employee satisfaction (Birkinshaw, Bresman & Håkanson, 2000) through developing a common purpose for the organization (Olie, 1994).

Functional integration creates operational synergies through the combination of superior processes (Andrade, Mitchell & Stafford, 2001; Jovanovic & Rousseau, 2002; Zaher & et al., 2013). Even though successful functional integration improves performance (Birkinshaw et al., 2000), several problems and conflicts can occur. Coordination across multiple functions such as finance, accounting, sales, marketing, and production can increase conflicts, decreasing integration effectiveness (Shrivastava, 1986). Further, communication deficits can increase confusion over processes, leading to coordination problems (Nemanchi & Vera, 2009). Also, changes in organizational structures can disrupt the ordinary work environment and be detrimental for outcomes (Paruchurin, Nekar & Hambrick, 2006; Puranam et al., 2009; Ulrich & van Dick, 2007).

This implies that codified experience, as well as routinization, lead to the enactment of distinct sets of applied rules for human and functional integration requiring careful balancing. In other words, the process of "what is learned" to "how it is applied" in integration is neither free of constraints nor automatic but requires coordination. We argue that this balancing or coordination of routinization on the one hand and codification of experience, on the other, is achieved via a clear M&A intent. A strategic M&A intent like a strategic intent in general affects organizational development and its internal processes (Hamel & Prahalad, 1991; Lovas & Ghoshal, 2000). Even though acquisition decisions are a top management responsibility (Trichterborn et al., 2016), a strategic

M&A intent provides an organization-wide direction for the decentralized tasks of acquisition integration, determining resource allocation patterns and the use of competencies (Doz, Hamel & Prahalad, 1989; Mariadoss, Johnson & Martin, 2014). Consequently, the application of specific human and functional integration rules based on routinization and codified experience, is contingent on stringent actions towards a common strategic intent (Doz et al., 1989). Simply, the combination of codified experience, routinization, rules, and strategic M&A intent impacts acquisition performance. Figure 3 visualizes the relationships that will be further developed in the next section.

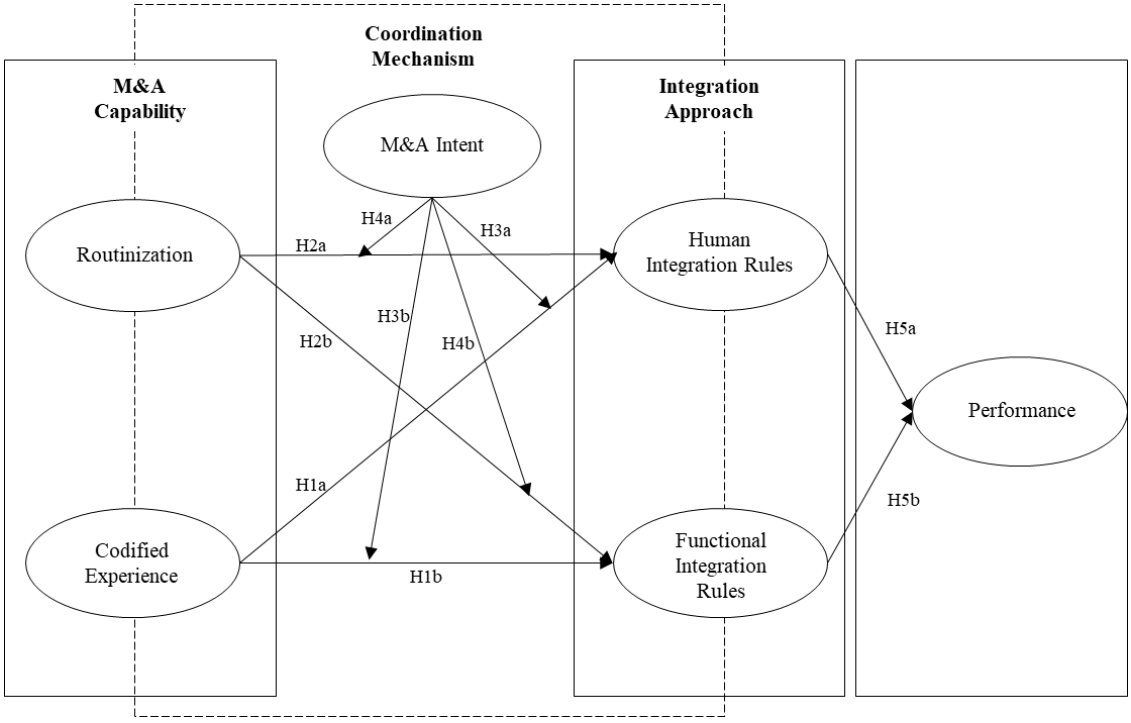

Figure 3: Conceptual model

Hypothesis Development

What is learned, in the form of routines, impacts subsequent acquisition processes through the application of a stock of human and functional integration rules. Therefore,

below we theorize the impact of codified experience and routinization on these rules (see figure 1).

Codified Experience and Applied Integration Rules

We argue that codified experience positively affects the application of integration rules. Codified experience is based on inscribed knowledge, allowing for the organization wide dissemination of authorized and officially accepted knowledge (Cowan, David & Foray, 2000), guiding responsible managers through the acquisition process (Zollo & Winter, 2002). Therefore, the legitimacy of codification and their ease of transfer result in the application of formal rules (DeHart-Davis, Chen & Little, 2013; March et al., 2000). Thus, codified experience provides managers with know-how, know-what, and know-why, fostering the application of a stock of dominantly formal integration rules.

Formal rules are especially relevant in the case of human integration. Human integration is characterized by high levels of uncertainty, ambiguity (Cording et al., 2008), and also unpredictability (Vester, 2002). Integration might disrupt the work of key employees, resulting in an increased managerial turnover and employee resistance (Larsson & Finkelstein, 1999; Puranam & Srikanth, 2007). Additionally, it might also lead to a loss of social status of key personal (Paruchuri et al., 2006), in-group and out-group biases all contributing to uncertainty (Meglio, King & Risberg, 2015; Weber, Tarba & Reichel, 2009;). Simply, the management of human integration requires managers to deal with an enormous flood of information (Uzelac, Bauer, Matzler & Waschak, 2016). Here, the application of formal rules might facilitate compliance, and help to establish a transparent structure in temporal settings (DeHart-Davis, 2009). Thus,

Hypothesis 1a (H1a): *The increased usage of codified experience increases application of human integration rules.*

By the same token, formalized rules based on codified experience also support functional integration. Codified experience provides useful tools, checklists, and manuals, disseminating legitimized knowledge for functional integration (Zollo & Singh, 2004; Zollo & Winter, 2002). While functional integration aims to leverage operational synergies (Ahuja & Novelli, 2017; Hitt, Harrison & Ireland, 2001; Rappaport, 1986), it often results in coordination problems and conflicts among employees (Cooke, 2006; Shrivastava, 1986). Here, the application of formal functional integration rules gives managers guidance, decreasing their uncertainty (Deshpande & Zaltman, 1987, John & Martin 1984, Moenaert & Souder, 1990). Also, allowing managers to foster collaboration, increases transparency, and improves information flows across functions (Galbraith & Nathanson, 1978; Ruekert & Walker, 1987), through the application of formal rules. Despite the complexity of functional integration, it involves repetitive tasks (Trichterborn et al., 2016). As such, codified experience allows managers to apply a formal stock of functional integration rules, facilitating appropriate resource re-configuration (Koskela-Huotari, Edvardsson, Jonas, Sörhammar & Witell, 2016) and supervise cross-functional projects (Pinto, Pinto & Prescott, 1993). Thus,

Hypothesis 1b (H1b): *The increased usage of codified experience increases the application of functional integration rules.*

Routinization and Integration Rules

We argue that routinization positively influence the application of integration rules. Routinization depends on actors' common understanding, linking tasks and people through mutual knowledge of "what to do" and "what is appropriate". This enables routinization to coordinate actions in complex settings (Feldman & Rafaeli, 2002; Srikanth & Puranam, 2011). While codified experience might enable integration managers to coordinate actions through dominantly formal rules in integration, we argue that routinization support managers by utilizing predominantly informal rules. Informal rules emerge through the establishment of common understanding, which leads to implicit behavioral knowledge, promoting, or penalizing behavior (Axelrod, 1986; Ouchi, 1980). We suggest that this common understanding, underpinned by routinizaiton, manifests in informal rule driven integration procedures.

Informal rules are especially relevant in the case of human integration. While human integration aims to increase employee satisfaction and collaborative problem-solving (Jansen, Tempelaar, Van den Bosch & Volberda, 2009), managers are required to generate mutual trust (Olie, 1994) and shared identities, playing a decisive role in acquisition success (Birkinshaw et al., 2000). Here, the application of informal rules in human integration enables managers to foster social formation in which firm members negotiate domains, activities, relations, and roles (Drori, Wrzesniewski & Ellis, 2013; Scott, 2004). Also, the application of informal rules, based on routinization, supports managers in sense making (Weick, 1993), serving as an informal instrument of control, and coordinating activities towards a common organizational purpose (Monin, Noorderhaven, Vaara & Kroon, 2013; Okhuysen & Bechky, 2009). Combined, effective human integration relies on routinization that result in the application of rules, leading to

clear goals, reducing uncertainty, and ambiguity for managers and employees (Graebner, 2004; Haspeslagh & Jemison, 1991). Thus,

> **Hypothesis 2a (H2a)***: The increased usage of routinization increases the application of human integration rules.*

Additionally, we argue that routinization positively affect the application of functional integration rules. While functional integration includes repetitive tasks such as staff planning, it also demands flexibility in decision making by managers due to unforeseen events (Uzelac et al., 2016). Our reasoning regarding routinization, supporting the application of functional integration rules is based on the logic that especially informal rules provide managers with quick problem-solving structures based on a common understanding (Puranam et al., 2009).

Routinization allows managers to adjust and align integration approaches, according to contextual needs, leading to a more purposeful and orchestrated application of functional integration rules. This is important as prior research showed that strict formalized integration measures resulted in reduced innovation capabilities after technological acquisitions (Benner & Tushman, 2003; Leonard-Barton, 1992; Ranft & Lord, 2002). Here, managers relying on routinization implicitly know, when to correctly apply certain integration rules (Hutzschenreuter, Kleindienst & Schmitt, 2014; Levinthal & Rerup, 2006;) and thus provide the needed flexibility. Combined, in line with previous research, we argue that the balance between stability and change, needed during functional integration requires the application of a broad stock of rules (Burns & Scapens, 2000; Lukka, 2007). Thus,

Hypothesis 2b (H2b): *The increased usage of routinization increases the application of functional integration rules.*

The Orchestrating Effect of a Strategic M&A Intent: Where We Want to Go in Acquisitions

We argue that a strategic M&A intent positively effects the deployment of functional and human integration rules. Below we develop two sets of hypotheses that capture the moderating effects of the relationship of "what is learned" and "how it is applied". A strategic M&A intent is defined as the role of acquisitions for strategy execution, involving for instance the importance of organic versus acquisitive growth through structured acquisition programs. It manifests in a narrative that acts as a top-down orchestrating mechanism (Okhuysen, 2005). Thus, a strategic M&A intent constitutes long term goals shared by the top management team (Lovas & Ghoshal, 2000; Noda & Bower, 1996), directing and coordinating activities towards a common goal (Lovas & Ghoshal, 2000).

Routinization and applied rules are also facilitators of coordination (Okhuysen & Bechky, 2009). Managers utilize routinization that affect the application of a stock of informal and formal rules, helping them to navigate through the complexities of human and functional integration. While codified experience uses plans and manuals, serving as a top-down mechanism of coordination, routinization enables coordination through a bottom-up perspective. Both affect overall rule application and therefore how managers coordinate (Okhuysen & Bechky, 2009). While codified experience, routinization and rules combined with a firm's strategic M&A intent guide managerial actions as described

above, they are not independent. In fact, we argue that the role of codified experience, routinization and rules for performance is moderated by the existence of a strategic M&A intent.

Codified experience fosters the application of formal rules, providing stability, and enabling organization wide consistency, helping managers to orientate. Even though codified experience aims to allocate the right information to the right person at the right time (Binney, 2001), supporting managers in their decisions by applying rules, they require orchestration by creating a direction in settings where multiple interests collide (Daft & Weick, 1984; Lessard & Zaheer, 1996; Mintzberg, 1994a, 1994b; Weick, 1995). This is particularly important in acquisitions that are characterized by complexity, ambiguity and conflicts of interests (Zollo & Meyer, 2008). Here, prior research explicitly highlights that a strategic M&A intent channels decisions based on codified experience (Denis, Langley & Lozeauet, 1991; Kaplan & Norton, 2000), resulting in rule application (Bart, 1986). Thus,

> **Hypothesis 3a (H3a)**: *Strategic M&A intent positively moderates the relation of codified experience and the application of rules in human integration.*

> **Hypothesis 3b (H3b)**: *Strategic M&A intent positively moderates the relation of codified experience and the application of rules in functional integration.*

Contrary, we argue that a strategic M&A intent negatively effects the relation of routinization and the application of integration rules. This means that a stronger strategic M&A intent weakens the relationship of routinization and the application of integration rule. The reliance on predominantly informal rules results in ad hoc and case by case decisions (Okhuysen & Bechky, 2009). This case-by-case approach may provide greater

flexibility and speed (Beer, Voelpel, Leibold & Tekie, 2005; Lumpkin & Lichtenstein, 2005; Slater & Narver, 1995). A central advantage of such an approach is that dispersed individual experience, insights and tacit knowledge can be exchanged and leveraged (Desouza & Evaristo, 2003; Hansen, Nohria & Tierney, 1999; He & Huang, 2011; Hughes et al., 2009; Venkitachalam & Busch, 2012). Thus, top-down coordination via a strategic M&A intent weakens the effect of routinization on rule application (Burgelman, 1994; Burgelman & Grove, 1996; Denis et al. 1991; Doz & Prahalad, 1987; Kaplan & Norton, 2000; Lovas & Ghoshal, 2000; March et al., 2000; Noda & Bower, 1996) for several reasons.

First, while a strategic M&A intent serves as an orchestrating device during integration, it might also constitute a source of inertia and path dependency (Hutzschenreuter, Pedersen & Volberda, 2007; Sydow & Schreyögg, 2009), reducing flexibility (Doz & Kosonen, 2008) necessary in acquisition integration (Schriber, Bauer & King, 2019; Schriber, King & Bauer, 2018; Vester, 2002). Second, the flexibility effects of routinization might be in conflict with the stability enhancing strategic M&A intent. Especially, a strategic M&A intent might limit the necessary room for ad hoc and case by case maneuvers (Burgelman, 2002, 1988). Third, the bundling of dispersed pockets of knowledge requires flexibility (Friesl & Silberzahn, 2017) and sensitivity that might be reduced by a top-down strategic M&A intent (Doz, 2020; Doz & Prahalad, 1991). Combined, routinization results in informal rule application, shared practices, and ad hoc and case by case coordination. Top-down orchestration via a strategic M&A intent, however, undermines these effects. Thus,

> **Hypothesis 4a (H4a)**: *Strategic M&A intent negatively moderates the relation of routinization and the application of rules in human integration.*

Hypothesis 4b (H4b): *Strategic M&A intent negatively moderates the relation of routinization and the application of rules in functional integration.*

Rule Application and Performance

In addition to our previous arguments, we propose that rule application in integration positively impacts performance. Rules are beneficial for firms and contribute to increased performance effects, such as increased firm or employee performance. Gary and Wood (2011) observed that rules improve decision making in uncertain business environments, and therefore, increased firm performance. Additionally, rules improve goal setting in organizations, leading to improved employee performance (Squires & Wilders, 2010).

In the M&A context, prior research identified rules as an important instrument to alter the outcome of acquisition integration performance (Datta, 1991). Following this argument, we recognize that acquisition integration is the most important (Haleblian & Finkelstein, 1999; Haspeslagh & Jemison, 1991) and complex phase (Shrivastava, 1986), determining the overall outcome (Brock, 2005; Cording et al., 2008; Haspeslagh & Jemison, 1991; Proft, 2013). Consequently, we argue, that a stock of rules supports managers in navigating through integration complexity and ambiguity, leading to improved performance.

Rules bridge the "what is learned-outcome relationship" by shedding light on the "how it is applied". Prior research investigated the effects of applied rules and improved decision making in uncertain business environments by reducing managerial knowledge

gaps (Gary & Wood, 2011). We follow this argumentation and propose that applied rules foster performance through improved managerial action effectiveness.

Human integration aims to reduce resistance, to avoid uncertainty, and create a common identity (Birkinshaw et al., 2000). Managers that simultaneously deal with multiple employee concerns might overcome complexity through applied integration rules, for several reasons. First, rule application supports managers and their corresponding employees through aligning their shared language and culture in acquisition integration (Ashkenas & Francis, 2000), enabling the formation of a joint identity (Ryan & Connell, 1989; Schweizer & Patzelt, 2012). Second, the application of rules fosters the success of interorganizational relationships (Ring & Van de Ven, 1994), which deems to be essential for effective human integration that builds on mutual trust and understanding (Olie, 1994; Pablo, 1994). Prior research highlights how rule application leverages existing knowledge (Ashkenas, DeMonaco & Francis, 1998; Nolop, 2008). Simply, managers adapting human integration rules, gain guidance and direction, and therefore are able to integrate more effectively. Thus,

> **Hypothesis 5a (H5a)**: *The increased application of human integration rules increases performance.*

Similarly, we argue that the application of functional integration rules increases performance. Functional integration aims to identify and realize operational synergies (Ahuja & Novelli, 2017; Hitt et al., 2001; Rappaport, 1986). However, instead of increased collaboration, it often results in coordination problems among employees (Cooke, 2006; Nemanchi & Vera, 2009; Shrivastava, 1986). Here, rule application reduces uncertainty by guiding managers' actions and communications. Rule application increases cross-functional information flows (Gilsdorf, 1998), fosters successful

interorganizational relationships (Ring & Van de Ven, 1994) and thus enhances coordination.

Additionally, functional integration is demanding for managers due to the requirement to coordinate multiple processes to realize expected synergies. As such, managers are confronted with the co-evolution of processes that facilitate or impede functional integration (Rouzies, Colman & Angwin, 2019) increasing the overall task complexity. Here, applied rules improve decision making through improved perception, information processing, and problem-solving structures (Anderson, 1990; Johnson-Laird, 1983; Rehder, 2003). As such, integration managers rely on rules that guide them through the complexity of functional integration. Thus,

> **Hypothesis 5b (H5b)**: *The increased application of functional integration rules increases performance*

METHODOLGY

Sample & Data

For testing our proposed theoretical model, we collected primary data, which was conducted in spring 2017. We used mail and internet survey methodology for data collection. The goal of the survey was to contact CEOs or responsible employees (heads of corporate development and M&A departments) that were actively involved in acquisitions. We chose our contacts based on the Zephyr database from the Bureau van Dijk, providing comprehensive and recent information on M&A deals and contact data. In our survey, we focused on industrial companies with headquarters located in Germany,

Austria, and Switzerland being active on the market for corporate control between 2011 and 2016, for several reasons. Industrial companies usually have longer lifecycles, extended planning horizons, and a long-standing international footprint (De Massis, Audretsch, Uhlaner & Kammerlander, 2017). As such the sampled firms can be described as typical firms of the German "Mittelstand" that have a long-standing track record on the market for corporate control. We deliberately considered a range of acquirers with a broad variety, regarding their acquisition experience. This sampling structure is appropriate as our paper aims to understand how firms deploy routinization and codified experience based on varying acquisition experience. On average the firms of our sample have acquired between 3 and 4 firms within 5 years prior to the acquisition referred to in the questionnaire. However, we excluded all one-time acquirers.

Second, the Germanic countries are industrial nations where small to medium sized firms play a decisive macroeconomic role. Third, these countries provide a rather similar institutional setting that makes acquisitions and their legal framework, for example labor regulations comparable (Botero, Djankov, Porta, Lopez-de-Silanes & Shleifer, 2004). The chosen period guarantees that a firm was actively involved in an ongoing integration process that would either be in a final stage or already completed (Ellis, Reus & Lamont, 2009; Homburg & Bucerius, 2005; Zollo & Meier, 2008). Additionally, the set timeframe aims to minimize the risk of recollection bias (Ellis et al., 2009; Krishnan, Hitt & Park, 2007). To ratify our questionnaire, we adapted a two-step pre-test in February 2017 with M&A managers, CEOs, and academics of the field (Churchill, 1995). This resulted in addition of examples and the clarification of some terms that were difficult to understand. We adapted the design and structure of our questionnaire following the recommendations of Dillman (2000). We could identify 1,065 contact persons in 609 companies. Eventually, a response rate of 18.56 percent was

accomplished, which is in line with other primary data studies in the field of M&A (Capron, Dussauge & Mitchell, 1998; Engelen, Gupta, Strenger & Brettel, 2015; Homburg & Bucerius, 2006). Overall, we received 113 questionnaires from individual acquires. Most companies in our sample generated a turnover of 100 to 499 million euros per year and employ between 251 and 5,000 people. More than 49% of the firms, which replied, were family-owned and older than 31 years. This reflects the basic population quite well.

Previous Acquisitions	in %	Previous Divestments	in %	Annual Sales in mil. €	in %
None	11.5	None	61.1	<25	12.4
1-2	24.8	1-2	23.9	25-49	8.0
3-4	27.4	3-4	12.3	50-99	14.2
5-6	14.2	5-6	0.9	100-249	22.1
7-8	1.8	7-8	0.9	250-499	23.0
>8	20.4	>8	0.9	500-1,000	8.0
				>1,000	12.4
Firm Age (years)	in %	Majority Owner	in %	Number of Employees	in %
1-5	2.7	Family Firm	49.6	1-50	4.4
6-10	1.8	Private Firm	27.4	51-100	4.4
11-15	3.5	Listed Firm	13.3	101-250	8.0
16-20	8.8	Institutionally owned	9.7	251-500	21.2
21-25	17.7			501-1,000	18.6
26-30	18.6			1,001-5,000	24.8
>30	46.9			>5,000	18.6

Table 4: Descriptive statistics

Measurement Development

For measurement model operationalization we dominantly rely on existing scales, modified to fit our research context. One measurement model is newly developed and we describe the procedure in the following.

Codified experience: Codified experience are a central construct in management research. In our study, we rely on the measurement used by Dhanaraj, Lyles, Steensma and Tihanyi (2004), assessing the codified experience in organizations. We modified this scale in a way that it fits the M&A context. The modified construct identifies codification experience through three items, measuring to what extent (1) documents provide insights on the M&A process, (2) manuals guiding on the process and technical manuals, (3) experience of applied management has been documented. Codification experience is assessed on a 7-point scale.

Routinization: Routinization are assessed with the measurement model developed by Withey, Daft and Cooper (1983). As the original construct was developed for the marketing context, we modified the items in a way that they fit the acquisition context. The construct operationalizes routinization with five items measuring to what extent (1) integrations tasks are similar in various acquisitions, (2) integration projects are routine jobs, (3) integration tasks are handled in the same manner, (4) team members of the integration team perform repetitive activities, and (5) there is a similar sequence of tasks from integration to integration. Integration routinization was assessed on a 7-point Likert scale.

Applied human integration rules: In our study, we modify the measurement model developed by Cording and colleagues (2008) to assess the degree to which human

integration has been standardized. Effective knowledge application requires standardization which is achieved through the application of rules. These imply similarity, uniformity, and continuity of behavior, and actions, (David & Rothwell, 1996) within the agent (Barley, 2008; Coad & Herbert, 2009; DiMaggio, 1997; Thornton & Ocasio, 2008). Rules are needed to apply standardization in organizations to achieve efficiency, (Child, 1972; March et al., 2000). Thus, we use the degree of standardization as a proxy for rule application. The construct identifies standardization of human integration through three items measuring to what extent organizations apply standardized over individualized procedures when integrating (1) organizational structure, (2) organizational culture, and (3) personnel management practice. Standardization of human integration is assessed on a 7-point Likert scale.

Applied functional integration rules: We modified the measurement model developed by Zaheer, Castañer and Souder (2013) to assess the degree to which functional integration follows a standardized procedure. We follow the same approach as for the application of human integration rules. The construct identifies standardization of functional integration through four items, measuring to what extent organizations rely on standardization over individualization when integrating (1) strategy formulation, (2) marketing, (3) research and development, and (4) operations. Standardization of functional integration is assessed on a 7-point Likert scale.

Strategic M&A intent: We assessed the strategic M&A by the strategic importance of acquisitions for the organization (for example we draw on Achtenhagen, Brunninge & Melin, 2017 and Hitt et al., 1996). As such we operationalized the strategic M&A intent with three indicators (1) what contributes to your firm growth (organic vs

acquisitive), (2) is the growth of the firm based on a strong acquisition program, (3) the share of acquired sales in the past five years. We also used a 7-point Likert scale.

Performance: Acquisition performance is a theoretically complex construct (Cording, Christmann & Weigelt, 2010) and has been assessed by stock market, accounting, and survey-based measures. Interestingly, studies show that different measures share only a little variance (Cording et al., 2010; Melio & Risberg, 2011; Zollo & Meier, 2008). Despite the criticism of survey-based measures, they tend to capture the strategic performance of acquisitions better than the other two (Ellis et al., 2009). As acquisitions differ (Bower, 2001), and our research focus is on acquisition behavior in general, we refrain from comparing the outcomes of different acquisitions. Acquisitions are a tool to execute strategy. Thus, we focus on the achievement of strategic goals compared to major competitors. This is in line with previous research in M&A (Lisboa, Skarmeas & Lages, 2011; Trichterborn et al., 2016; Vorheis & Morgan, 2005) and we assess performance with four indicators comparing the acquirer's performance to major competitors by using the scale developed by Trichterborn et al., (2016). On a 7-point Likert scale we assess (1) development of sales, (2) market share, (3) operating margin, and (4) synergy realization. It is important to note that the performance distribution in our sample reflects the reported performance rates of the investigated industries well. To understand whether our performance measure is skewed due to common and key informant bias, we collected secondary data for the firms where respondents added their contact details and where data was available for triangulation. From a subsample of 13% we collected cumulative abnormal growth rates from 2012-2016. The items of our performance measure correlate highly with the secondary data measure (e.g. synergy realization: correlation coefficient = 0.482; p=0.035 one-sided). This gives us reason to

believe that problems associated with single source surveys are not a serious issue for our data.

Controls: As our research model is potentially affected by other variables, we implemented a range of control variables. First, we control for the dominant acquisition focus of the acquiring organization. As such, we ask for the share of acquisitions that is (1) domestic or in the European Economic Area or (2) outside these areas. This is important as the first two areas provide similar and familiar institutional contexts that differ from the latter one. These contexts might provide firms with different lessons learned and require different rule application for human and functional integration. Second, firm size in terms of the number of employees and sales is also important, as firm size is an indicator of formalization and stricter rules. Third, Top Management turnover might have a direct effect on key learnings from previous acquisitions and on the application of integration rules. Fourth, acquisition experience is the foundation for routine development and rule application during integration. In line with previous studies, we assess the number of acquisitions conducted in the past five years as an indicator of acquisition experience. The psychometric properties of the scales can be found in the appendix.

Analysis and Results

Common Method Bias

Having collected information about our dependent and independent variables with the same survey instrument, common method bias might be a serious issue for our data. As Podsakoff, MacKenzie, Lee and Podsakoff (2003) stated common method bias

is the main source of measurement errors. To mitigate the risk for common method bias, we implemented various a priori measures such as separating the variables to reduce proximity effects (Podsakoff, MacKenzie & Podsakoff, 2012) and applying latent variable measurement (Harrison, McLaughlin & Coalter, 1996). With the data at hand, we applied a statistical analysis to assess a potential common method bias. The Harman's single factor test (Podsakoff & Organ, 1986) is suitable to test for common method since it utilizes a single factor analysis capturing the covariance between the independent and dependent variables. Additionally, we applied an ad hoc approach suggested by Podsakoff et al. (2003). We followed the guidelines developed by Liang, Saraf, Hu and Xue (2007) and the ratio of substantive factor loadings and method factor loadings is 129 to 1. Lastly, we collected secondary data for a subsample (13%) that highly correlates with our performance measure. These results indicate no serious common method bias issues.

Applied Method

We apply structural equation modeling for testing our research model. Instead of a covariance-based approach, we apply the variance-based approach computed thought the Smart PLS Software (Ringle, Wende & Will, 2005). There are several reasons for choosing this approach. First, PLS is more adequate for models that are more complex (Haenlein & Kaplan, 2004). Second, sample size requirements are lower for the variance-based approach compared to the covariance-based approach, incorporating results validity (Fornell & Bookstein, 1982; Haenlein & Kaplan, 2004; Tenenhaus, Vinzi, Chatelin & Lauro, 2005). Third, PLS provides a higher degree of predictability when optimizing the dependent constructs, which is in our case the overall firm performance.

Also, we utilized the two-step approach suggested by Agarwal and Karahanna (2000) consisting of two independent approximations, one for the measurement models and one for the analysis of the relationships. To ratify our research model results, we followed the guidelines of Hulland (1999) assessing the measurement and the structural model.

Analyzing the Measurement Models

In the first step of the analysis, we evaluated the measurement models. All indicators of our latent variables apart from two have loadings above the recommended threshold of 0.7. One indicator of the construct integration routines has a value of 0.670 and one indicator or the latent variable strategic M&A intent has a value of 0.485. Even though both indicators' loadings are short below the threshold, we decided to keep them in the analysis (Hulland, 1999) as the composite reliability values exceed the recommended threshold of 0.7. Furthermore, construct validity is established as the average variance extracted (AVE) values are all above the 0.5 threshold. In the next step, we assessed discriminant validity on the indicator and construct level (Henseler, Ringle & Sinkovics, 2009; Hulland, 1999). The Fornell-Larcker criterion, see table 5 (Fornell & Larcker, 1981) as well as the cross-loadings criterion is fulfilled. Furthermore, the heterotrait-monotrait ratio is with the greatest value of 0.395 below the recommended threshold. Combined, we hold that discriminant validity is established. In addition, we tested for bias and skewness in the distribution of our estimator by comparing our results against bias corrected confidence intervals. Our results show that all variables lie within the lower and upper bound of the recommended threshold.

		1	2	3	4	5	6	7	8	9	10	11	12
1	CEO Management	*1*											
2	Codification	0.19	*0.82*										
3	Domestic and EER M&A	-0.05	0.28	*0.85*									
4	Experience	-0.07	0.33	0.89	*0.84*								
5	FI Standardization	0.22	0.56	0.17	0.18	*0.78*							
6	Firm Size	0.04	0.33	0.28	0.33	0.17	*0.94*						
7	HI Standardization	0.24	0.35	0.19	0.19	0.58	0.13	*0.89*					
8	International M&A	-0.10	0.26	0.26	0.61	0.13	0.28	0.09	*1*				
9	Middle Management Responsibility	0.37	0.41	0.22	0.29	0.38	0.31	0.34	0.2	*0.89*			
10	Performance	0.42	0.32	0.12	0.10	0.42	0.00	0.36	0.053	0.37	*0.79*		
11	Routines	0.12	0.47	0.25	0.23	0.44	0.09	0.46	0.08	0.27	0.38	*0.78*	
12	TMT Turnover	-0.14	0.12	-0.00	0.04	-0.03	0.05	-0.08	0.12	0.22	-0.07	0.02	*1*

Table 5: Fornell-Larcker criterion

Hypothesis	Beta	P-Value	Bias corrected Confidence Intervals		F^2
			Lower bound	Upper bound	
Hypothesis 1a	0.20	0.069	0.02	0.45	0.01
Hypothesis 1b	0.47	0	0.32	0.64	0.21
Hypothesis 2a	0.39	0.002	0.17	0.64	0.12
Hypothesis 2b	0.21	0.045	0.03	0.43	0.05
Hypothesis 3a	-0.19	0.046	-0.37	-0.01	
Hypothesis 3b	-0.27	0.017	-0.54	-0.05	
Hypothesis 4a	0.21	0.031	0.03	0.41	
Hypothesis 4b	0.29	0.004	0.17	0.51	
Hypothesis 5a	0.18	0.046	0.03	0.37	0.00
Hypothesis 5b	0.32	0.005	0.07	0.52	0.04
Firm size	-0.11	0.226	-0.30	-0.00	0.01
TMT Turnover	-0.05	0.462	-0.17	-0.00	0.00
Acquisition focus EWR and domestic	-0.02	0.827	-0.07	0	0.01
Acquisition focus international	-0.02	0.819	-0.08	0	0.00

Table 6: Bias corrected confidence intervals

Assessing the Structural Model and Hypotheses Testing

Figure 2 displays the results of the PLS analysis. Our research model can explain a substantial amount of variance of firm performance (R^2 = 0.224), the application of human integration rules (R^2 = 0.340), and the application of functional integration rules (R^2 = 0.500). Furthermore, the analysis of the Stone-Geisser criterion reveals that our results reconstruct the hypothesized effects in a substantive way (all values exceed the

threshold of 0). For testing the hypotheses, we applied the standard PLS algorithm. For assessing the significance of the relationships, we ran the bootstrapping procedure with 5,000 bootstraps applying the individual sign changes option.

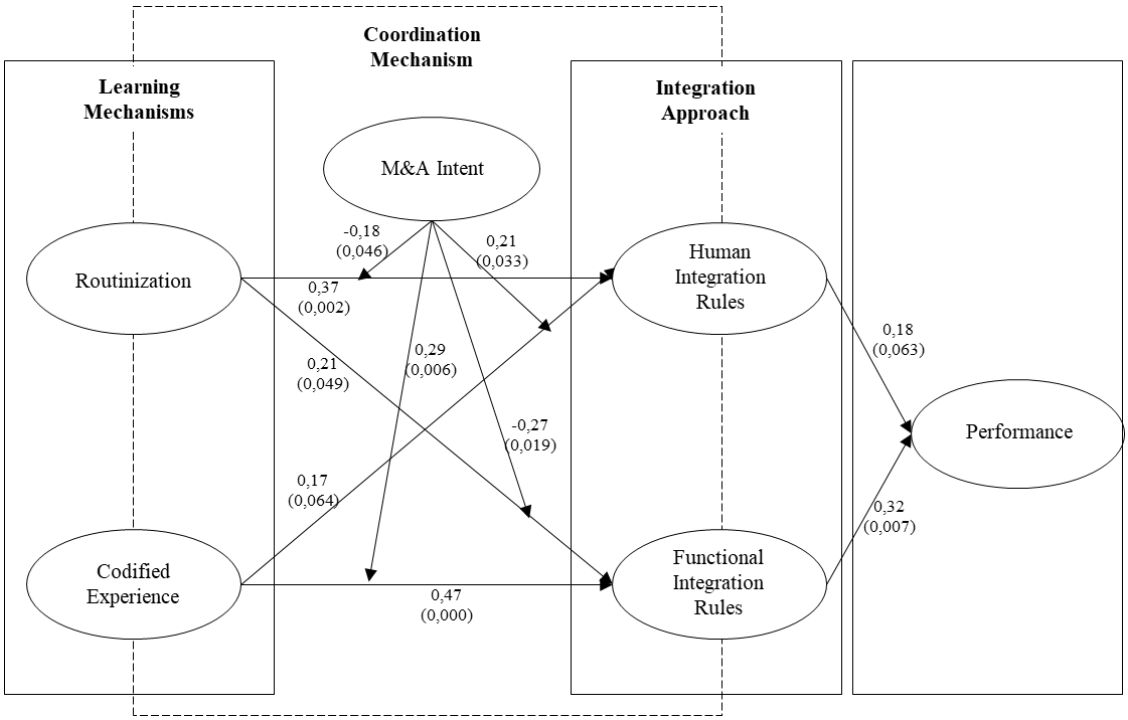

Figure 4: Empirical results

We find partial support for H1a (β = 0.169; p = 0.064), indicating that codified experience results in greater application of human integration rules. We find also empirical support for hypothesis H1b. Codified experience leads to a greater application of functional integration rules (β = 0.466; p = 0.000). For hypothesis H2a, indicating that routinization result in the application of human integration rules, we find empirical evidence as the coefficient is positive and significant (β = 0.367; p = 0.002). Also, H2b supports our hypothesis and is positive and significant (β = 0.208; p = 0.049). This suggests that routinization lead to the application of functional integration rules. For hypotheses H3a, anticipating that a strategic M&A intent negatively moderates the relationship of routinization and human integration rule application, we find empirical evidence. The effect is negative and significant (β = -0.189; p = 0.046). Similarly, we

find support for hypotheses H3b, assuming that the relationship between routinization and functional rule application is supported (β = -0.269; p = 0.019). For hypotheses 4a and 4b, indicating a positive moderation between codified experience and their application of human and functional integration rules, we find empirical evidence. Both moderations are positive and significant for human integration rule application (β = 0.214; p = 0.033) and functional integration rule application (β = 0.287; p = 0.006). The following figures show the visualized interaction effects.

Also, for hypotheses H5a and H5b, we find evidence for a positive and significant effect of functional and human integration rules on performance (β = 0.319; p = 0.007 and β = 0.184; p = 0.063). This result suggests that functional integration has an immediate performance effect through the elimination of redundancies and cost savings and human integration through increasing employee satisfaction and by creating a common identity.

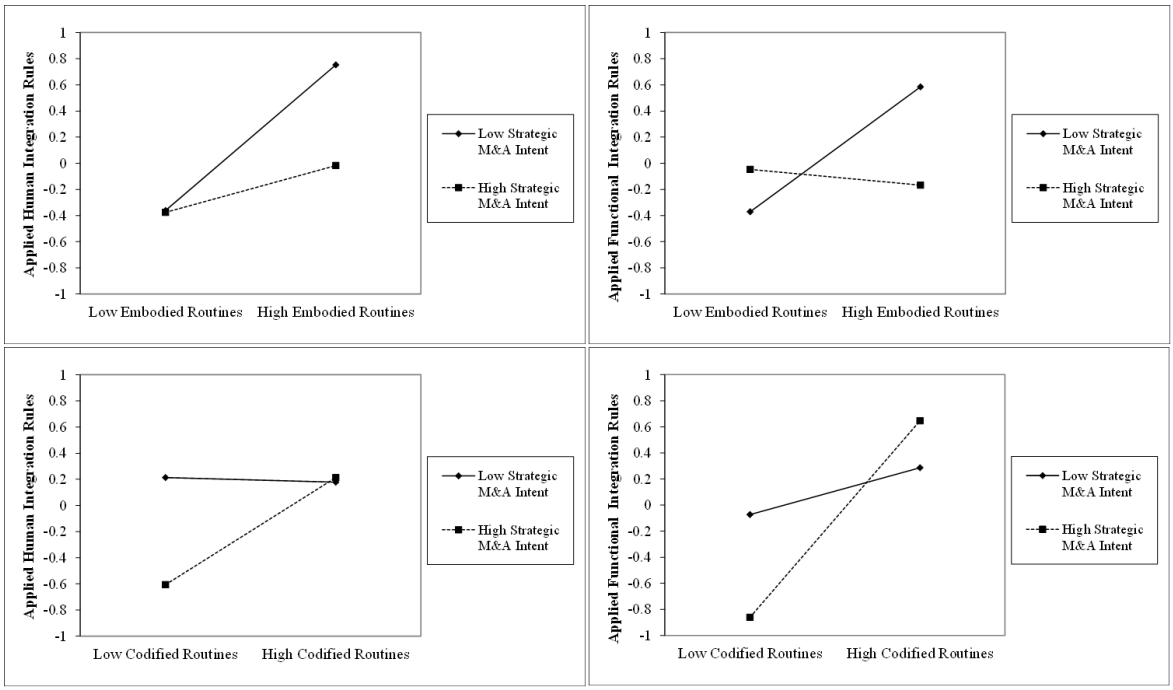

Figure 5: Interaction effects

Our control variables have also some effects on the research model. Top management turnover negatively affects the application of human integration rules (β = -0.116; p = 0.087), while the effects on the application of functional integration rules and performance remain insignificant. Acquisition experience positively effects both, embodied routines (β = 0.196; p = 0.035) and codified routines (β = 0.355; p = 0.000) but has no significant direct effect on rule application and performance. All other controls remain insignificant.

Discussion

Theoretical Implications

Previous acquisition related research has largely neglected the role of routinization, codified experience and especially their application in acquisitions. Consequently, we adopted a perspective connecting the relationships of codified experience and routinization (*what is learned)*, how these are applied (*what is applied*), and coordinated (*where do we want to go)*. We believe that our research advances scholarly knowledge in our discipline in several ways.

First, in line with previous research, our study focused on the role of codified experience and routinization in acquisition management (Basuil & Datta, 2015; Heimeriks et al., 2012; Zollo, 2009). In contrast to previous research that traditionally focused only on one single construct such as codification (Heimeriks et al., 2012; Zollo & Winter, 2002) or routinization (Basuil & Datta, 2015; Lazaric & Denis, 2005), we show that multiple experience concepts coexist. This coexistence matters as firms apply routinization and codified experience differently to counterbalance the negative effects

of each one and combine their mutual strengths. This coexistence reflects the complex ecology of knowledge that is required in managing acquisition integration. While formalized codified experience enables transparency, organizational wide stability, and guidance, they lack in flexibility (Gersick & Hackman, 1990; Weiss & Ilgen, 1985) and constitute probably a source of inertia (Hannan & Freeman, 1984). Contrary and in line with previous advances in routine theory (Feldman & Pentland, 2003), we show that routinization allows for flexibility through ad hoc and case-by-case management. Paradoxically, the management of acquisition integration demands both, codified experience and routinization to balance conflicting requirements that characterize acquisition management as project management as it fullest (Vester, 2002). However, codified experience and routinization just reflect what is learned but not how it is applied.

Second, we follow the argument of Vermeulen and Barkema (2001), discussing the importance of research that unravels what organizations learn and how they apply it. This is important as it opens the black box of the experience-performance relationship. While research on routines in acquisitions has advanced our understanding of how experiences are transferred to lessons learned, little is known how this is brought to bear in subsequent acquisitions. That matters, because research on codification and routinization in M&A still provide conflicting results (Heimeriks et al., 2012; Zollo, 2009). This still implies that there is more going on than previously assumed. In this paper, we show that the application of rules constitutes a missing link. Simply, having codified experience and routinization does not imply that they are activated and actually applied (Collinson & Wilson, 2006). For example, while checklists may sit comfortably in folders and drawers, it is only when they are enacted in the form of applied rules that they shape acquisition outcomes. We give empirical evidence that codified experience and routinization result in the application of rules for human and functional integration.

However, these are not straightforward relationships as "what is learned" and "how it is applied" requires an answer to a third question, namely "where do we want to go".

Third, strategy research increasingly highlights the role of a strategic intent for various domains for example how firms build on capabilities or form alliances (Edelman, Brush & Manolova, 2005; Hamel & Prahalad, 1996). Applied to the context of M&A, we therefore argue, that the relationship of knowledge and applied rules are contingent on the strategic direction. This is important, as acquisitions constitute rare and complex strategic decisions that require an array of sequential but interrelated decisions. Without a clear direction, the gravitational forces of these interrelated decisions endanger coherence and thus, outcomes of acquisitions. While previous research neglected the impact of strategic direction on learning from acquisitions, we provide evidence that a strategic M&A intent enhances or diminishes the effects of codified experience or routinization on the application of rules. Our results show that a strategic M&A intent strengthens the effects of codified experience, while it reduces the effects of routinization on rule application, during human and functional integration. A strategic M&A intent channels a complex array of sequential and interrelated decisions, triggering the effect of codified experience on rule application. Contrary, the coordinating effect of a strategic M&A intent limits space for adhoc and case by case maneuvers necessary to react to unforeseeable events based on routinization. We show this in the context of M&A research but similar effects have been shown for resource allocation patterns in strategy development (Burgelman, 1983, 2002). Combined, while a strategic M&A intent defines the "where we want to go", it might limit the necessary degrees of freedom in decision making in situations where flexibility is needed.

Managerial Implications

Our study is also relevant for managers responsible for acquisition planning and implementation. First, managers utilize codified experience and routinization to overcome the complexity and uncertainty of acquisition integration. Managers deploy both to help them engage in acquisition related work processes such as human and functional integration. But our findings imply caution. Managers need to carefully choose which combinations of routinization and codification are appropriate for the challenge at hand. Therefore, managers should always keep the integration goal in mind. A second managerial implication connects acquisition strategy with integration. We provide evidence that a strategic M&A intent, ranging from a clear strategic direction to opportunistically driven acquisition behaviors frame how managers apply their learnings. A clear strategic direction encourages managers to stronger rely on codified experience for the application of human and functional integration rules, while it hampers the reliance on routinization. Thus, the strategic M&A intent must fit the strategic purpose of acquisitions. If not aligned, managers run danger of over-reliance on given practices, rather than customizing to the needs of the acquisition.

Limitations

The strategic contribution of an acquisition is dependent on integration that takes three to five years (Ellis et al., 2009), the performance assessment is distant in time. Consequently, acquisition research based on survey-data is faced with the conflict of reliable measurements due to the capacity of recollection. In addition, a longitudinal research design would be superior to a cross-sectional design. Notwithstanding,

managerial turnover in the post-merger phase and the problem of lacking willingness of managers to participate in surveys over a long period makes longitudinal studies in the context of acquisitions potentially impractical. Additionally, to measure the impact of acquisition integration on organizations, a period of three to five years is suggested (Ellis et al., 2009; Homburg & Bucerius, 2005; Zollo & Meier, 2008), imposing additional complications to implementing a longitudinal design. Lastly, the number of observations and the statistical power correlate and thus might impose a limitation. However, as this is the first paper which observes the relationship of routinization, codified experience and rule application in the context of acquisitions, we have no studies to compare our results to.

Conclusion

Overall, this study provides strong evidence that routinization, codified experience and applied rules are important pieces to better understand how firms conduct acquisitions. We show that applied rules, based on routinization and codified experience, are highly relevant in driving performance indirectly. Overall, we suggest that their application should receive more scholarly attention in the context of acquisitions. We also show that a strategic M&A intent really matters, as it orchestrates "what is learned" and "how it is applied". Combined, our results suggest that routinization and codified experience can be both, detrimental and beneficial and managers need to consider "what is learned", "what is applied", and "where they want to go". We hope that our study stimulates further research on applied learnings and coordination in the context of acquisitions.

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Paper 2: How To Get Back On Track During Acquisition Integration – The Importance of M&A Specialists and M&A Generalists

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Abstract: Acquisition integration timing matters as delays in integration may affect synergy realization. Delays in realizing synergies can reduce the net present value of an acquisition, whereas knowledge may speed up integration processes. Building on the knowledge-based view and drawing upon a large empirical survey with data from the UK, we investigate whether different types of managerial knowledge impact value capturing activities during the integration phase. In other words, where there are delays in integration, careful deployment of specialists' and generalists' knowledge in effective combination can enable an acquirer to get back on track with synergy realization. However, we also find that managerial knowledge can be both detrimental and beneficial in managing delays in acquisition integration. Further, we conceptualize cost and revenue-enhancing synergies and outline their distinct sensitivities to delays in acquisition integration.

Keywords: Merger and Acquisitions, Speed, Delays, Synergies, Integration, Performance

Introduction

There is an intuitive appeal that speed matters for acquisitions and especially for post-merger integration and the realization of synergies (Angwin, 2004). Interestingly, most research looks exclusively at the time elapsed from deal closing until the desired degree of integration is reached (Cording et al., 2008; Homburg & Bucerius, 2006, 2005). However, the planned integration speed is often different from the one actually realized, resulting in either schedule delays or accelerations (Rouzies et al., 2018). Delays in integration and synergy realization are closely linked to each other. For example, a delay in cost synergy realization can reduce an acquisition's net present value (Chanmugam, Shill, Mann, Ficery & Pursche, 2005). However, despite the detrimental effects of delays, managers can implement measures to bring synergy realization back on track (Teerikangas et al., 2011). Simply, like other organizational processes that are shaped by humans, if managed well, integration might result in better synergy realization and superior acquisition performance, independent of whether it is delayed or not (Roberts, 1999; Wiggins & Ruefli, 2005).

Drawing on the knowledge-based view, (Grant, 1996: Barney, 1991: Kogut & Zander, 1992; Felin & Hesterly, 2007) we argue that the orchestration and deployment of different types of managerial knowledge allows organizations to mitigate the negative effects of delays (Forbes, 2005). This configurational perspective to knowledge resources has a long tradition in strategy research (Bierly & Chakrabarti, 1996). Indeed, different attributes of knowledge are closely linked with varying effects of speed within organizations. For example, while the ease of codification positively influences the speed of internal knowledge transfers (Kogut & Zander, 1995), tacitness and complexity slows down processes of knowledge transfer (McEvily & Chakravarthy, 2002). Thus, the

importance of distinguishing between different sources of knowledge (Arend et al., 2014) and determining how their attributes impact organizational speed is important.

One central variable determining speed is how organizations orchestrate knowledge to achieve effects of acceleration or deceleration. Knowledge orchestration is especially relevant for complex processes where managers commonly focus on the job at hand, but not on the whole process (Jemison & Sitkin; 1986). Indeed, acquisition integration is a complex process, consisting of parallel subprocesses such as human and functional integration (King et al., 2020). These involve a broad range of managers that require different types of managerial knowledge and involve various firm functions (Meglio & Risberg, 2011). For example, acquisition integration is commonly planned, monitored, controlled, and partially executed by M&A specialists which are usually located in a dedicated M&A function (such as transaction or integration executives) (Trichterborn, Knyphausen-Aufseß, & Schweizer, 2016). However, acquisition integration also involves generalists (such as members of the top management team or heads of specific firm functions) that are accountable for integrating specific aspects that are in the scope of their daily responsibilities (Meglio & Risberg, 2011).

While specialized M&A managers are most knowledgeable about the domain-specific aspects of the M&A process, they have limited insights into the daily business that is being integrated. In contrast, general managers understand the daily business but have less domain-specific acquisition knowledge necessary to manage particular elements of integration subprocesses (Haspeslagh & Jemison, 1991). The successful management of integration therefore requires both, generalists and specialists. For example, acquisition planning executed by specialists can only imperfectly anticipate

daily business challenges that occur during integration (Graebner, 2004). As a result, we argue that in order to mitigate the negative effects of delays, it is not the joint involvement of specialists and generalists that matters, but the effective allocation of knowledge to specific tasks (Zander & Kogut, 1995). In other words, to get back on track with synergy realization, we argue that it is necessary to deploy specialists' and generalists' knowledge in an effective combination (Coff, 1997; Ferguson & Hasan, 2013; Miller, Zhao, & Calantone, 2006; Nyberg & Wright, 2015). Combined, we intend to contribute to research in sevral ways.

First, we complement prior research on synergy realization (Finkelstein & Larsson, 1999; Homburg & Bucerius, 2006, 2005) by theorizing and empirically showing that negative effects of delays in integration can be mitigated by the appropriate orchestration of specialist's and generalist's knowledge. M&A specialists and generalists contribute with different types of knowledge and expertise to the management of integration. As such, while both can have positive or detrimental effects, it is about the appropriate allocation of different knowledge types to specific situations (Zander & Kogut, 1995) that matters. Building on the knowledge-based view, we provide new insights into how different types of managerial knowledge impact value capturing activities during the integration phase (King et al., 2020). Complementing prior research on resource management activities we argue, and show, that it is not solely a question of aligning hierarchies (Chadwick, Super & Kwon, 2015) or of sensemaking and sense giving of top and middle managers (King et al., 2020) but also a question of orchestrating different knowledge types. This contributes to a better understanding of pertinent knowledge orchestration in organizations.

Second, synergy realization is an important milestone in achieving acquisition success. However, the concept of synergies has been criticized as being too nebulous (King et al., 2004), which might explain why synergy realization is rarely debated in the strategic management literature (Feldman & Hernandez, 2020). We conceptualize cost and revenue-enhancing synergies and outline their distinct sensitivities to delays in acquisition integration. We argue that this is due to their distinct temporal characteristics, probabilities of occurrences, and value creation potential. These different characteristics make them differently sensitive to delays in integration subprocesses, and they also differ regarding the value of managerial knowledge that makes or breaks synergy realization.

Third, this paper makes an important methodological contribution to the role of speed in acquisition research. Previous research has assessed speed as a post hoc absolute concept that is directly linked to performance (Angwin, 2004; Homburg & Bucerius, 2006, 2005; Uzelac et al., 2016). Empirical results on the speed-performance relationship remain inconclusive. We complement research on integration speed by investigating delays of different subprocesses of integration. This approach allows us to consider what the firm actually wanted to achieve, instead of measuring the absolute time elapsed. This is important, as synergy realization is commonly imperfectly planned (Graebner, 2004) and delays are expensive, potentially reducing the entire value of an acquisition (Chanmugam et al., 2005). As a consequence, our approach offers a more nuanced understanding of acquisition outcomes by developing a contextualized integration planning and execution perspective on speed.

The structure of the paper is as follows. In the next section, we outline the underlying theoretical reasoning and develop the corresponding hypotheses. Later, we empirically investigate the proposed relationships with survey data from consultants and

executives informing about 154 acquisitions from different firms based in the United Kingdom.

Knowledge based view and integration

We draw on the knowledge-based view (KBV) of the firm to enhance our understanding of how different knowledge types impact the management of delays and their effects on synergy realization in acquisition integration. A critical contribution of KBV is that knowledge is the primary resource, enabling new value creation, heterogeneity, and competitive advantages (Barney, 1991; Grant, 1996; Kogut & Zander, 1992). Indeed, a central argument of the KBV is that organizations integrate and combine distributed knowledge to perform tasks productively (Grant, 1996). Different levels of education, training, and experience form knowledge specialization or generalization, which in turn impact performance on individual and organizational levels (Coff, 1997; Ferguson & Hasan, 2013; Miller, Zhao, & Calantone, 2006; Nyberg & Wright, 2015). For example, the properties of managerial knowledge substantially affect the speed of organizational processes (Kogut, Zander 1995) and thus performance (Forbes, 2005). This is crucial for acquisition integration, where speed matters but delays are common and expensive. Interestingly, prior research shows that the application of different types of knowledge during integration may alter the outcome of an acquisition (Lamont et al., 2019).

Managers with specialized knowledge have deeper insights into specific tasks and processes, enabling them to make better informed decisions in their area of expertise (Becker, 1962; Parsons, 1972; Rosen, 1983). Specialized M&A managers have an in-

depth domain-specific understanding of acquisition subprocesses that might be similar across multiple deals (Barkema & Schijven, 2008; Haspeslagh & Jemison, 1991), enabling them to efficiently reconfigure resources and communicate integration-related tasks. However, specialization can also result in a too narrow understanding of interdisciplinary concepts, leading to more conservative and less flexible decision-making (Beyer, Chattopadhyay, George, Glick, Ogilvie & Pugliese, 1997; Geletkanycz & Black,2001).

In constrast, generalists have a broader set of managerial knowledge, based on their in-depth experience of managing day-to-day business activities. For example, functional or departmental heads have a broader set of managerial knowledge and skills due to their experience in managing goals, tasks, and employees. The lack of specialized knowledge in various domains requires them to develop coordination and communication skills, allowing them to bridge and manage across several domains successfully (Crémer, Garicano, & Prat, 2007; Custódio et al., 2013; Ferreira & Sah, 2012; Karim & Williams, 2012; Murphy & Zábojník, 2007). As a result, generalists can perform better in environments of greater complexity and hierarchies because of their knowledge of managing and coordinating activities (Ferreira & Sah, 2012).

Both knowledge domains are relevant for acquisition integration and synergy realization. On the one hand, acquisition integration contains repetitive tasks similar across different deals (Barkema & Schijven, 2008), yet on the other hand, also involve highly specialized tasks (Bauer, King & Matzler, 2016). Combined, they contribute to multiple integration goals which are achieved through distinct integration subprocesses, namely human and functional integration (Birkinshaw et al., 2000; King et al., 2020). As a result, different types of managerial knowledge have to be orchestrated appropriately

to effectively execute diverse tasks around human and functional integration that jointly contribute to synergy realization and subsequently acquisition performance (Larsson & Finkelstein, 1999; Birkinshaw et al., 2000).

Human integration aims to mitigate the negative consequences of integration by contributing to the development of shared identities and increased employee satisfaction (Birkinshaw, et al. 2000). As integration might disrupt the work of key employees, resulting in an increased managerial turnover and employee resistance (Larsson & Finkelstein, 1999; Puranam & Srikanth, 2007), human integration activities aim to increase employee satisfaction and collaborative problem-solving (Jansen, Tempelaar, Van den Bosch & Volberda, 2009), by generating mutual trust (Olie, 1994) and shared identities (Birkinshaw et al., 2000). This is important as the negative consequences of integration reduces acquisition performance (Larsson & Finkelstein, 1999).

Human integration is complemented by functional integration, which enables synergy realization through the combination of superior processes (Zaher et al., 2013, Andrade, Mitchell & Stafford, 2001; Jovanovic & Rousseau, 2002). Furthermore, functional integration facilitates appropriate resource configurations (Koskela-Huotari, Edvardsson, Jonas, Sörhammar & Witell, 2016) through the coordination of cross-functional projects (Pinto, Pinto & Prescott, 1993). Here, functional integration plays a decisive role for both cost-cutting and revenue-enhancing synergies by identifying redundant or complementary resources and realigning workflows to achieve value generation.

However, delays in both human and functional integration are detrimental to integration success and synergy realization (Graebner 2004). Deviations from planned integration may arise from information asymmetry between the different phases of the

acquisition process (Graebner et al., 2017; Kissin & Herrera, 1990), from ambiguity inherent in acquisitions (Cording et al., 2008), from unforeseeable or unexpected circumstances that require ad hoc decisions (Zahra et al., 2006), or from managerial ambitions (Zollo 2009), resulting in delayed or accelerated human and functional integration. Commonly, integration measures get lost in the detail of the day-to-day activities (Vaara, 2003), resulting in delays. Delayed integration might result in postponed synergy realization or even in failed acquisitions goals (Yu, Engleman & Van de Ven, 2005).

Synergies constitute a core aim of acquisitions. Synergies derive from owning and controlling resources and the combination of tangible and intangible resources and capabilities (Kaul & Wu, 2016). Synergies are based on the understanding that two or more companies generate greater value in working together than they could as standalones (Goold & Campbell, 1998). Synergies can be categorized according to their value creating mechanisms. Typically, managers distinguish between cost and revenue-enhancing synergies (Herd, Saksena & Steger, 2005). Cost synergies aim to lower costs by eliminating redundancies and overlapping processes. These cost-cutting measures are possible due to asset similarities between acquirers and targets. Simply, organizations do not even need to grow in size and market share as they can operate with reduced costs and so, achieve synergy gains.

Meanwhile, revenue-enhancing synergies aim to leverage complementary assets to increase revenues. For example, in technological acquisitions, acquirers' skills in commercialization, manufacturing, and distribution can be linked with the technological expertise of the target to quickly exploit market potential and increase revenues (Puranam, Singh & Zollo, 2006; King, Slotegraaf & Kesner, 2008). These synergies are

more difficult to reap and less visible in the short term than cost synergies but provide greater value potential (Barney, 1988; Haspeslagh & Jemison, 1991). Nonetheless, most companies report market share losses following acquisitions (Harding & Rose, 2007). This is because these resources or knowledge are harder to control and also more difficult to replicate (King & Zeithaml, 2001).

Hypotheses development

Integration delays in the form of human and functional integration impact subsequent planned realization of cost and revenue-enhancing synergies, which might be reflected in deferred cash flow improvement and negative effects on anticipated net present value gain. However, M&A specialists and M&A generalists impact these relationships through specific or more general managerial knowledge, effecting delays through their management (see figure 5).

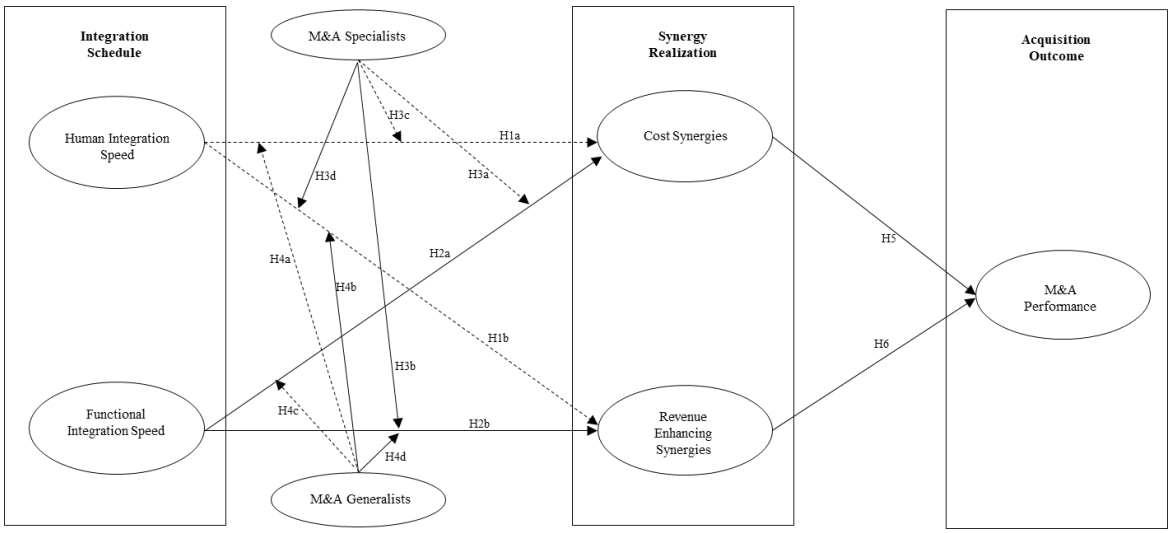

Figure 6: Conceptual model

Human integration delays and synergies

We argue that delayed human integration hinders the realization of cost synergies. Human integration aims to mitigate the negative consequences of integration, such as employee uncertainty about careers and role ambiguity (Ullrich & van Dick, 2007, Vaara, 2003), leading to employee resistance and value destruction in acquisitions (Larsson & Finkelstein, 1999). Human integration is crucial as it enables shared identity, increased employee satisfaction, and reduces the negative side effects of target integration (Birkinshaw, et al. 2000). However, delays in human integration foster suboptimal conditions and inhibit momentum (Angwin, 2004), increasing uncertainty and dissatisfaction amongst employees, making it easy for competitors to poach key staff (Ashkenas, De Monaco & Francis, 1998; Homburg & Bucerius, 2005). Delayed human integration goes hand in hand with delayed resource deployment decisions (Brueller et al., 2014), resulting in uncertainty for both the target and acquiring firm (Homburg & Bucerius, 2006). This uncertainty disrupts productivity (Cannella & Hambrick, 1993), increases employee resistance, and reduces the positive effects of human integration. Consequently, delays in human integration hinder the realization of synergies in general.

Human integration delays are especially harmful for cost synergies, which derive from the elimination of redundancies or increased market power, resulting in immediate profit and loss statement effects. For example, overlapping activities and identical resources (Chatterjee, 2007; Zaheer et al., 2013; Zollo & Winter, 2002; Wang et al., 2020), such as the utilization of excess capacity, integrated sales forces with fewer employees, and duplicated functions can be eliminated. For instance, combining supply chains does result in increased supply chain power and lower costs by removing duplicate suppliers and allowing larger scale purchases. Here, timely human integration is essential

to lead to effective cooperation across previous boundaries to achieve cost synergy goals. Delayed human integration has negative effects on realizing cost synergies, as delays trigger opaque and political behavior (Vaara, 2003). This slows down the development of aligned organizational structures and makes it more difficult to generate a common purpose (Olie, 1994). Thus,

> **Hypothesis 1a (H1a)***: Delays in human integration reduce the realization of cost synergies.*

By the same token, delayed human integration hinders the realization of revenue-enhancing synergies. These synergies leverage resources and knowledge complementarity to enhance value generation in the firm (Chartier, Ferrer, Liu & Silva, 2017; Zaheer et al., 2013). Intangible and knowledge-based resources are deeply embedded in the organization (Jensen, Johnson, Lorenz, Lundvall & Lundvall, 2007). Therefore, synergy realization requires a common understanding, demands people's interaction and alignment to transfer resources and capabilities or make them accessible within the newly formed organization (Ranft & Lord, 2002; Birkinshaw et al., 2000). Delayed human integration, which causes disruption to employees (Canella and Hambrick, 1993) and increases employee resistance (Larsson & Finkelstein, 1999), hinders smooth interaction and alignment, necessary to achieve collaboration for revenue-enhancing synergies. Additionally, revenue-enhancing synergies require the alignment of downstream activities. To leverage the social ties of target employees with their customers (Öberg, 2016), common understanding and mutual trust are decisive (Olie, 1994). Delays might trigger political behavior (Vaara, 2003) that increases employees' dissatisfaction, motivating them to use the social ties to customers in a nonaligned way. Additionally, competitors might poach key employees (Ashkenas, De

Monaco & Fracnis, 1998; Homburg & Bucerius, 2005), resulting in a loss of social capital, making knowledge transfer to an acquirer impossible. Thus,

> **Hypothesis 1b (H1b)**: *Delays in human integration reduce the realization of revenue-enhancing synergies.*

Functional integration is defined as the rearrangement of practices, policies, and structures in functional areas (Zaheer et al., 2013; Ranft, 2006). We argue that delayed functional integration decreases the realization of cost synergies. Functional integration creates synergies through the reconfiguration of superior processes (Zaheer et al., 2013, Andrade et al., 2001; Jovanovic & Rousseau, 2002) by restructuring the coordination of acquirers' and targets' functions. As a result, functional integration is crucial for the whole integration process, determining the outcome of successful synergy realization (Larsson & Finkelstein, 1999). Delays in restructuring processes across multiple functions can have significant effects on cost synergies for the following reasons. First, cost-cutting can cause suboptimal conditions, resulting in vulnerability, in which organizations remain stuck if plans stay behind schedule (Angwin, 2004; Seo & Hill, 2005). Second, postponed efficiency improvements and their effect on the market may indeed be ineffective, for instance, competitors will already be adjusting their strategies by more aggressive behavior in the marketplace (Homburg & Bucerius, 2005; Grubb & Lamb, 2001). Third, due to the immediate effect of functional integration on cost synergies and thus, on the profit and loss statement (Damodaran, 2005; Rappaport, 1986), delays have an instant negative effect. For example, a one-month delay of integration can result in serious net present value losses (Chanmugam et al., 2005). Thus,

> **Hypothesis 2a (H2a)**: *Delays in functional integration reduce the realization of cost synergies.*

Also, we argue that delayed functional integration decreases the realization of revenue-enhancing synergies. As functional integration rearranges practices, policies, and structures of functional areas, it plays a decisive role when the synergy gain is built on complementary resources and their interaction (Zaheer et al., 2013; Ranft, 2006). Delays in this regard can have negative consequences on synergy realization. For example, slow centralization of research and development departments has negative effects on acquisition success (Gerpott, 1995), due to nonaligned and uncoordinated efforts, resulting in ineffective duplications. Additionally, delays decrease the potential to exploit synergy potentials (Angwin, 2004). This is important since revenue-enhancing synergies require the alignment of resources and the coordination of corresponding tasks over an extended timeline compared to cost synergies. To achieve coordination, a more sensitive approach compared to cost-cutting is necessary to minimize disruptions and uncertainty for key staff. Additionally, delays might result in a loss of momentum, leading to an energy entropy (Angwin, 2004). Therefore, to make the best use of acquired resources, and to manage synergies that are less predictable, delays in resource deployment decisions and their reconfiguration should be avoided (Brueller et al., 2014). Thus,

> **Hypothesis 2b (H2b*)***: *Delays in functional integration reduce the realization of revenue-enhancing synergies.*

M&A specialists and M&A generalists and their role in acquisition integration

Acquisition integration demands the involvement of different manager types to be successful. Managers in charge of integration processes can be classified according to

their experience and knowledge background. Prior research in this regard distinguished between specialists and generalists (Fahrenkopf, Guo & Argote, 2020; Chen, Huang, Mezer-Doyle & Mindruta., 2020; Custodio et al., 2013), as differences in knowledge of individuals affect organizational processes and their subsequent performance (Nyberg & Wright, 2015). This plays an important role in acquisition integration, as human and functional integration involve fundamentally different tasks and thus, require different management (King et al., 2020). Based on their different knowledge and expertise, we argue that M&A specialists and generalists have different effects when managing integration delays on synergy realization.

We hold that M&A specialists are able to compensate for the drawbacks of delayed functional integration. M&A specialists have distinct knowledge in managing repetitive subprocesses of acquisitions, including tasks such as finding acquisition opportunities, structuring a deal, evaluating a potential target, and financing an acquisition (Trichterborn et al., 2016). This specialization enables them to rely on experience, giving them concrete insights into how cost and revenue-enhancing synergies are achieved by efficiently reconfiguring resources. Furthermore, specialists possess increased information processing capabilities (Bolton & Dewatripont, 1994) but also in-depth knowledge about specific sub-processes, enabling them to better grasp and realize synergy opportunities when time is scarce and pressure is increased due to delays.

Accordingly, M&A specialists have a better understanding of functional integration, impacting both, cost and revenue-enhancing synergies. Functional integration involves repetitive tasks across acquisitions, such as realigning operational processes or eliminating redundancies. For cost synergies, the specific expertise of M&A specialists allows them to detect specific patterns, apply proven tools, and implement

functional changes suited to a specific case efficiently. This expertise especially pays off during delays, as it allows them to effectively deploy in subprocesses and efficiently manage delays. Similarly, the realization of revenue-enhancing synergies benefits from the specific knowledge of M&A specialists. Based on acquisition specific knowledge, they are able to detect and retain key employees, customers, and suppliers, which constitute an important cornerstone in realizing revenue-enhancing synergies. Especially when functional integration is delayed, customer relationships are weakened (Rogan, 2014; Rogan & Greve, 2014) and customers might feel abandoned as the acquiring firm's attention turns inward (Öberg, 2014). Here, specialized acquisition knowledge can help mitigate the negative effects of functional integration by giving managers useful guidance to navigate complexity, especially when faced with delays. Therefore, specialists are more efficient and effective in managing delayed functional integration by minimizing the negative effects of both, delays in cost and revenue-enhancing synergies. Thus,

> **Hypothesis 3a/b (H3a/b)**: *M&A specialists positively moderate the relationship of delayed functional integration on cost and revenue-enhancing synergies.*

On the contrary, specialization may inhibit M&A specialists as they are less likely to really understand the complexities of the business domain and the social structure of the target. This is important for human integration as the reconciliation of differences between acquirer and target company employees is the starting point for mutual understanding and the development of a common purpose (Olie, 1994). A lack of understanding in this regard might prove to be detrimental for human integration, causing stress and, therefore, employee resistance. Specialized knowledge builds on repetitive elements of acquisition subprocesses. However, "the human aspect of each acquisition is

likely unique and limits" the transferability of specialized knowledge of one acquisition to another (Bauer et al., 2016: 153). Consequently, M&A specialists responsible for human integration might even trigger negative effects of delayed human integration on synergy realization. Thus,

> **Hypothesis 3c/d (H3c/d)**: *M&A specialists negatively moderate the relationship of delayed human integration on cost and revenue-enhancing synergies.*

Alternatively, M&A generalists have a broader understanding and experience of business domains and daily activities. Their broader knowledge base and experience enables them to bridge across several knowledge domains, due to their experience and background as leaders in their positions. Furthermore, generalists understand pertinent coordination mechanisms and are able to effectively communicate them (Crémer, Garicano, & Prat, 2007; Karim & Williams, 2012; Murphy & Zábojník, 2007). This proves to be essential for human integration, focusing on mitigating the negative effects of career uncertainty and role ambiguity by developing a shared identity and increase employee satisfaction (Birkinshaw, et al. 2000). Here managers, able to mobilize employees and mitigate conflicts through superior communication and coordination, prove to be successful (Steigenberger, 2017), especially when human integration is delayed. For this reason, M&A generalists are able to reduce the negative effects of delays in human integration. Thus,

> **Hypothesis 4a/b (4a/b)**: *M&A generalists positively moderate the relationship of delayed human integration on cost and revenue-enhancing synergies.*

However, M&A generalists' extensive knowledge lacks specific acquisition knowledge, potentially leading to misunderstandings of the specific acquisition logic and

its impact on synergy realization. For the appropriate materialization of revenue-enhancing and cost synergies, it is important to understand specific mechanisms of the acquisition process and its underlying decisions. The lack of this specialized knowledge inhibits M&A generalists in fully comprehending resource complementarity and optimal elimination of redundant resources. Additionally, while bridging across knowledge in multiple domains might be beneficial for human integration, opaque decisions and politically driven behavior might appear detrimental for functional integration (Vaara, 2003). As a result, the knowledge of M&A generalists might even trigger the negative effects of delayed functional integration as they might be more concerned about maintaining the daily business and reducing disruption for employees. This might be encouraged by their sensitivity to existing social relationships. Additionally, the lack of knowledge in rearranging practices, policies, and structures in functional areas might result in additional negative effects of delays in functional integration. Thus,

> **Hypothesis 4c/d (H4c/d)**: *M&A generalists negatively moderate the relationship of delayed functional integration on cost and revenue-enhancing synergies.*

Synergies and acquisition performance

Cost synergies enable cost-cutting through the elimination of overlapping or redundant resources and the execution of market power. However, these cost-cutting measures are mainly achieved through economies of scale or scope. Thus, cost synergy realization is driven by achieving reduced cost levels while increasing the scale or scope of an organization. (Rumelt 1982; Teece, 1980; Penrose 1959). Combined, organizations

can extend their market power while operating at a lower rate of expenses, resulting in increased performance (Montgomery, 1985; Bradley, Desai & Kim, 1983). Thus,

> **Hypothesis 5 (H5)**: *Increased realization of cost synergies increases acquisition performance.*

In contrast, revenue-enhancing synergies improve revenue growth by delivering or modifying new products and services through resource complementarity (King et al., 2008). While these synergies are less visible and harder to predict compared to cost synergies, prior research asserted that revenue-enhancing synergies based on asset complementarities generate greater value (Barney, 1986, King et al., 2008). This is due to resources that can be tacit and or culturally embedded. Even though the probability of realizing revenue-enhancing synergies is lower compared to cost synergies, they might result in more sustainable competitive advantages as their outcomes are more difficult to imitate by competitors (Harrison, Hitt, Koskisson & Ireland, 1991). Thus,

> **Hypothesis 6 (H6)**: *Increased realization of revenue-enhancing synergies increases acquisition performance.*

Methodology

Sample & Data

Our theoretical model was tested by collecting primary data in spring 2018. In order to collect the data, we used internet survey methodology. The goal of the survey was to contact senior executives and M&A consultants involved in M&A integration. We decided to send the survey to internal managers and external consultants for various

reasons. Internal managers involved in the acquisition are most knowledgeable about the integration and the roles specific manager played during integration (Ellis et al., 2009; Homburg & Bucerius, 2006). As our research focused on the role of specialists and generalists, we contacted persons at different hierarchical levels and functions including top-managers (CEOs and CFOs) but also senior executives (head of M&A, corporate development, etc.) that were either employed by the acquirer or the target. However, a key informant design risks that respondents views might systematically differ from other organizational members (Kumar, Stern & Anderson, 1993) or be affected by socially desirable behaviours and consistency motives (Podsakoff et al., 2012). To mitigate these effects, we send the survey also to specialized M&A consultants. Despite the limitation of consultants to favor clients and their decreased accountability for implementing their services (Delany, 1995; Zollo & Meier, 2008), we have included M&A consultants as a source of information due to several reasons. First, responses from consultants engaged in acquisition integration are less biased in reporting results since external partners are less likely to comply with internal socially desirable behaviors or to be affected by post-hoc rationalization. For example, managers usually develop an idiosyncratic understanding of success after an acquisition enforced through social ties and team dependencies. As consultants are externals and leave the customer organization after the job is done, they are less affected by social ties and team dependencies (Zollo & Meier, 2008). Second, consultants have a high proficiency in the management of acquisition integration and have a broader understanding of companies, industries, and geographic settings, giving them better scope to benchmark acquisitions compared to typical managers (Zollo & Meier, 2008). Third, consultants are able to grasp a more detailed picture of acquisition decision-making and execution, compared to other external observers such as stock analysts (Hayward, 2002), due to their familiarity with the

project. Additionally, due to their involvement as externals, they can also provide broader and neutral insights into the management of acquisition integration and have been acknowledged as a better source of information (Bibeault, 1982; Bergh & Gibbons, 2011). Fourth, consultants' responsibilities include generating number-driven evaluations over processes and firm performance, making them more quantitatively oriented and, therefore, more capable of numeric measurement of processes and performance (Zollo & Meier, 2008).

Combined, we argue that internal and external informants contribute to developing a richer and potentially more accurate picture on the role of specialists and generalists in managing delays during integration. Anyway, different informants might have systematically different views. As such, we conducted various robustness tests. First, we tested if employees of the acquirer, target or advisor have systematically different views on delays, synergy realization, and the involvement of specialists and generalists. The results of a Kruskall-Wallis test reveal no significant differences among the different groups. Second, we compared responses from M&A specialists (for example members of the M&A department or integration managers) with those of M&A generalists (for example heads of a business unit or general managers). Again, the results of a Mann-Whitney U test among the two groups show no significant differences. Combined, we have reason to believe that our data captures the real situations of the acquiring firms.

Our contacts were chosen based on a database of a UK professional institute, providing comprehensive and recent information on the involvement of M&A practitioners in specific deals and their contact data. In the survey, we focused on industrial companies between 2008 and 2018, who were in the market for corporate

control and with headquarters located in the United Kingdom. The reasons for these choices are first that industrial companies have longer lifecycles, a long-standing international footprint, and extended planning horizons. (De Massis, Audretsch, Uhlaner, & Kammerlander, 2018). Second, the United Kingdom is an industrial nation in which industrial companies play a decisive macroeconomic role. Third, industrial nations provide similar institutional settings that make acquisitions and their legal framework comparable (Botero, Djankov, Porta, Lopez-de-Silanes & Shleifer, 2004). Fourth the chosen time period guaranteed that the firms were actively involved in ongoing integration processes, which would either be in a final stage or already completed (Ellis et al., 2009; Homburg & Bucerius, 2005; Zollo & Meier, 2008). Additionally, the timeframe aims to reduce the risk of recollection bias. Fifth, the United Kingdom is ranked second in global M&A activity, after the United States (Global Data, 2021).

Before our questionnaire was ratified, we adapted a two-step pre-test in summer 2018 with CEOs, M&A managers, and academics of the field (Churchill, 1995). This allowed us to modify specific terms that were difficult to understand and to add examples where needed. For the design and structure of the survey we followed the recommendations of Dillman (2000). We were able to identify 1065 contact persons. Eventually, a response rate of 14,46% was achieved, which is in line with other primary data studies in the field of M&A (Capron & Mitchell, 1998; Engelen, Gupta, Strenger & Brettel, 2015; Homburg & Bucerius, 2006). Combined, we received 154 responses from individual respondents on individual acquisitions. Interestingly most companies in our sample generated a turnover above 1 billion pounds per year and employed more than 1000 people. Additionally, table 1 shows further characteristics of our sample and our respondents.

Acquirer Ownership		Acquirer Business Mix		Acquirer Sales (at time of deal)		Acquirer Employees (at time of deal)	
Listed Company	79			0-25m	14	0-50	11
Private Company	34	70%+ of business in one industry	96	26-50m	6	51-100	7
Family-Owned Company	18	Majority of business in two industrial sectors	15	51-100m	7	101-250	9
Wholly owned Subsidiary	18	Majority of business in three industrial sectors	8	101-250m	16	251-500	11
Not-for-profit Company	3	Diversified Group	35	251-500m	21	501-1,000	13
State-owned Company	2			501-1,000m	13	>1,000	103
				>1,000m	77		

Target Ownership		Target Business Mix		Target Sales (at time of deal)		Target Employees (at time of deal)	
Listed Company	44			0-25m	44	0-50	29
Private Company	27	70%+ of business in one industry	118	26-50m	23	51-100	16
Family-Owned Company	45	Majority of business in two industrial sectors	20	51-100m	16	101-250	22
Wholly owned Subsidiary	27	Majority of business in three industrial sectors	7	101-250m	16	251-500	18
Not-for-profit Company	9	Diversified Group	9	251-500m	15	501-1,000	13
State-owned Company	2			501-1,000m	12	>1,000	56
				>1,000m	28		

Combined Sales		Combined number of Employees		Respondents from	In %
0-25m	26	0-50	8	Acquirer	63.1
26-50m	8	51-100	9	Target	16.3
51-100m	12	101-250	11	Consulting firm	20.6
101-250m	1	251-500	16	Position of respondent	
251-500m	18	501-1,000	12	Specialists	30
501-1,000m	22	>1,000	98	Generalsists	81
>1,000m	67			External/not specified	43

Table 7: Descriptive statistics

Measurement Development

For the assessment of our research model, we operationalized most of the constructs with existing scales that were modified to the extent that they fitted our research purpose. All variables were measured on a 7-point Likert scale, if not specified otherwise.

Schedule human integration was assessed with three indicators developed by Cording et al. (2008). In detail, we asked managers if they were far beyond the schedule (1), on schedule (4), or far ahead of schedule (7).

Schedule functional integration was assessed with eight indicators (Marketing, Finance, Accounting, R&D, Operations, Strategic Planning, IT-Systems, Sales, and Procurement/Supply). Parts of the indicators derive from Zaheer et al. (2013). Based on our pre-test, we added four more indicators that were seen as important for functional integration.

For Cost synergies, we asked respondents to estimate the degree to which the acquisition realized the following performance benefits for the acquiring company: consolidated purchases of input to reduce purchase price/cost per unit (e.g., through volume rebates), consolidated production to reduce production cost per unit (e.g., utilization of excess capacity), consolidated marketing resources to reduce marketing cost per unit (e.g., integrated salesforce with fewer employees), consolidated administration to reduce administrative overhead per unit (e.g., elimination duplicated head offices), consolidation of suppliers to reduce transaction costs per unit (e.g., like the elimination of intermediate storage, and purchasing).

For Revenue-enhancing-synergies, we asked respondents to estimate the degree to which the acquisition realized the following performance benefits for the acquiring company: increased volume of sales to reduce unit costs, cross-selling of complementary products to joint customers to increase joint sales, transfer of current know-how (including R&D) from one firm to the other for the latter firm to manage its operations more effectively, creation of new know-how from the interaction between the joining firms that one firm can use to manage its operations more effectively.

M&A Specialists were assessed by the involvement of the following managers in the integration process: (1) transaction executive, (2) integration executive (1 = not at all; 4 = partially; 7 = fully).

M&A Generalists were assessed similarly, asking to which extent the following persons were involved in managing the integration process?: (1) top management team, (2) heads of firm functions (1 = not at all; 4 = partially; 7 = fully).

Acquisition Performance was assessed with two dimensions, a subjective and an objective one (Becker, 2005). Prior studies have shown that managers or consultants have enormous knowledge about the transaction and the integration phase (Datta, 1991; Homburg & Bucerius, 2005) and that their rating correlates (highly and significantly) with objective success measures (Datta, 1991; Homburg & Bucerius, 2005). We applied the measurement model developed by Becker (2005) which has been applied by other M&A researchers (Bauer & Matzler, 2014). Each dimension was measured with four items (Becker, 2005).

Controls: As our research model is potentially affected by other variables, we implemented a range of controls. First, we control for the *retention of the target CEO*. We asked for tenure of the target CEO after the acquisition, ranging from 1= left immediately to 5= longer than one year. This is important as the managerial knowledge of the target CEO might impact integration and synergy realization. Second, we control for the *growth rate* of the firm by asking how the growth rate developed after the acquisition. Third, *financial distress* of the target might have direct effects on the performance of acquisitions. Fourth, *firm size* in terms of the number of employees and sales is also important, as firm size is an indicator of slower processes affecting

integration speed. Fifth, in line with previous studies, we assess the number of acquisitions conducted in the past five years as an indicator of *acquisition experience.*

Analysis and results

Common method bias

Even though, our survey was filled out by internal managers as well as external consultants, our dependent and independent variables have been collected with the same instrument. As a result, common method bias might be an issue in our data set. Due to concerns of measurement errors caused by common method bias (Podsakoff, MacKenzie, Lee & Podsakoff, 2003), we implemented various a priori measures such as separating the variables to reduce proximity effects (Podsakoff, MacKenzie & Podsakoff, 2012) and applying latent variable measurement (Harrison, McLaughlin & Coalter, 1996). To control and test for common method bias, we first assessed the variance inflation factors (VIF) of all variables. The VIFs in our research model are all below the recommended threshold of 3.3 (Kock, 2015). Second, we applied the ad hoc approach recommended by Podsakoff et al. (2003). For assessing the adhoc approach in PLS-SEM, we followed the guidelines developed by Liang, Saraf, Hu & Xue, (2007). The ratio of method factor loadings and substantive factor loadings is 55 to 1. These results indicate no serious common method bias concerns.

Applied Method

For testing our research model, we apply structural equation modeling (SEM). We apply a variance-based approach using Smart PLS, instead of a covariance-based approach (Ringle et al., 2005). We chose this approach for several reasons. First, PLS is prediction oriented and aims to optimize the dependent variable. Second, a variance-based approach requires lower sample sizes compared to covariance-based SEM (Fornell & Bookstein, 1982; Haenlein & Kaplan, 2004; Tenenhaus et al., 2005). Third, variance-based SEM is more adequate for complex models (Haenlein & Kaplan, 2004). For our second order measure, we utilize the two-step approach suggested by Agarwal and Karahanna, (2000). For assessing our research model, we follow the guidelines developed by Hulland (1999) and investigate first the measurement models and second the structural model.

Analyzing the measurement models

All indicators of our latent variables except from five are above the recommended threshold of 0.7. Three indicators out of eight of the construct functional integration schedule have values of 0.535; 0.572; 0.576. Also, two indicators of the latent variable cost synergy have values of 0.694 and 0.656. Even though these indicators are below the recommended threshold, we decided to keep them in the model as the composite reliability values exceed the recommended threshold of 0.7 (Hulland, 1999). Additionally, the average variance extracted (AVE) values are all well above the 0.5 threshold, confirming construct validity. Next, we evaluate discriminant validity on construct and indicator level (Henseler, Ringle & Sinkovics, 2009; Hulland, 1999). Both

the Fornell-Larcker criterion (see table 2) and cross-loadings criterion are fulfilled (Fornell & Larcker, 1981). Additionally, with a greatest value of 0.395 the heterotrait-monotrait ratio is below the recommended threshold. Given the above, discriminant validity is established.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Acquisition Experience	*1*												
Cost Synergies	-0,083	*0,715*											
Firm Size	0,154	-0,15	*0,851*										
Growth Rate	0,093	-0,035	-0,09	*0,863*									
M&A Generalists	-0,065	0,242	0,004	0,049	*0,763*								
M&A Specialists	0,473	-0,014	0,186	-0,031	-0,098	*0,869*							
Objective Performance	-0,034	0,468	-0,102	0,104	0,266	0,073	*0,85*						
Schedule FI	0,021	0,329	-0,081	0,072	0,172	0,041	0,259	*0,68*					
Schedule HI	-0,002	0,261	-0,127	0,128	0,197	0,047	0,262	0,658	*0,745*				
Subjective Performance	-0,029	0,423	-0,155	0,081	0,134	0,091	0,611	0,245	0,325	*0,873*			
Target CEO Retainment	0,053	0,005	-0,128	0,145	-0,029	0,043	-0,052	-0,05	-0,011	0,057	*1*		
Target in Financial Distress	-0,119	-0,061	-0,016	-0,144	0,112	-0,138	0,025	0,007	-0,027	-0,065	-0,177	*1*	
Revenue Synergies	0,026	0,446	-,004	0,082	0,148	0,208	0,517	0,286	0,257	0,41	0,061	0,049	*0,762*

Table 8: Fornell-Larcker criterion

Assessing the structural model and hypotheses testing

Figure 2 displays the results of the PLS analysis. Our research model can explain a substantial amount of variance of M&A success (R2 = 0.385), cost synergies (R2 = 0.193), and revenue-enhancing synergies (R2 = 0.220). Furthermore, the analysis of the Stone-Geisser criterion reveals that our results reconstruct the hypothesized effects in a substantive way (all values exceed the threshold of 0). For testing the hypotheses, we applied the standard PLS algorithm. For assessing the significance of the relationships, we ran the bootstrapping procedure with 5,000 bootstraps.

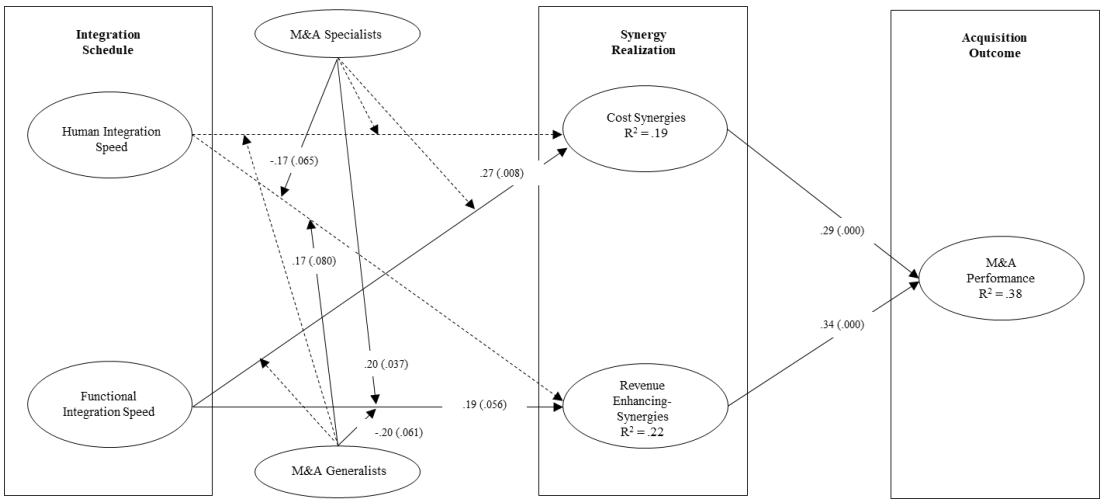

Figure 7: Empirical results

We find no support for H1a (β = 0.037; *p* = 0.613) and H1b (β = 0.082; *p* = 0.348), indicating that delays in human integration have no effects on the realization of cost and revenue-enhancing synergies. However, we find empirical support for hypothesis H2a (β = 0.275; *p* = 0.008) and partial support for H2b (β = 0.195; *p* = 0.056), implying that delays in functional integration impact cost and revenue-enhancing synergies negatively. For hypothesis H3a (β = 0.097; *p* = 0.227), anticipating that M&A specialists positively moderate the relationship of delays in functional integration and cost synergies, we find no empirical evidence. Contrarily, we find positive and significant effects for H3b (β =

0.209; p = 0.037), implying that M&A specialists positively moderate delays in functional integration, impacting revenue-enhancing synergies. Furthermore, for H3c (β = -0.101; p = 0.259) we find no empirical evidence but for H3d (β = -0.175; p = 0.065) partial support. This suggests that M&A specialists have detrimental effects in managing human integration delays, effecting revenue-enhancing synergies. However, no effect occurs for the relationship of human integration delays on cost synergies with M&A specialists as moderator.

The insignificant interaction effects on the relationships to cost synergies remain similar for M&A generalists. They have no significant effects when managing delays in human and functional integration on cost synergies. However, we find significant positive and negative interaction effects when M&A generalists are responsible for managing delays in human (H4b: β = 0.178; p = 0.08) and functional integration (H4d: β = -0.200; p = 0.061), impacting revenue-enhancing synergies. This suggests that M&A generalists have detrimental effects when managing delays in functional integration and positive effects when managing delays in human integration. The following figures visualizes the interaction effects.

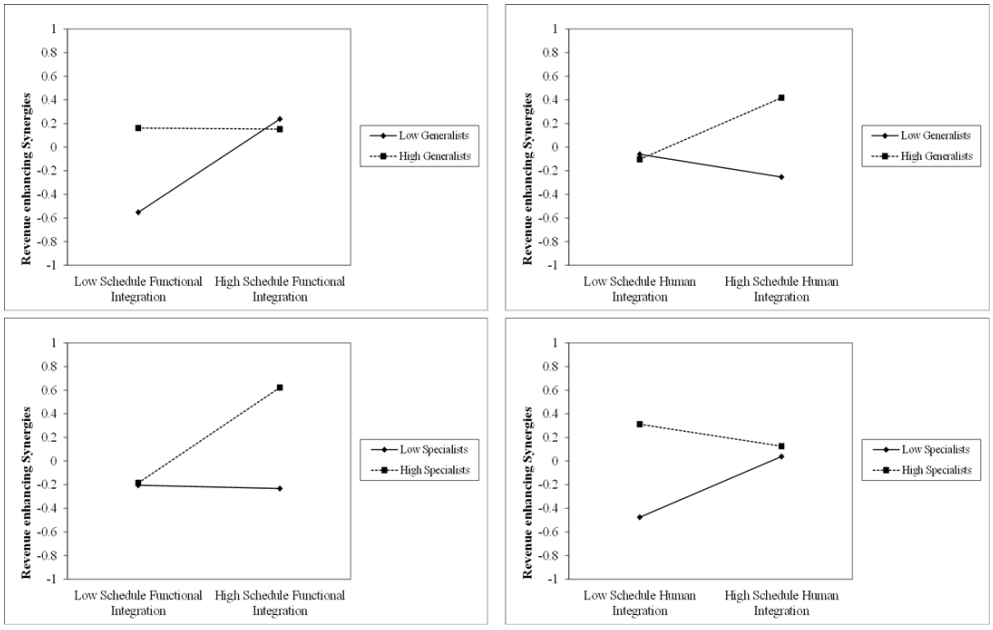

Figure 8: Interaction effects

Also, for hypotheses H5 and H6 we find positive and significant effects for cost synergies and revenue-enhancing synergies on performance (β = 0.297; p = 0.000 and β = 0.341; p = 0.000). This result suggests that cost synergies have an immediate performance effect through the elimination of redundancies and revenue-enhancing synergies through leveraging the complementarity of resources between the acquirer and target.

Our control variables also affect our research model. Firm size negatively affects cost synergies (β = -0.14; p = 0.068), while effects on revenue-enhancing synergies remain insignificant. Additionally, firm size negatively affects delays in human integration (β = -0.139; p = 0.067), but has no significant direct effects on delays in functional integration. All other controls remain insignificant.

Discussion

This paper investigates how firms mitigate the negative effects of delays in post-merger integration. We do that by developing and testing theory that links firms' orchestration of specialist vs. generalist managerial knowledge with the realization of synergy benefits during integration. The findings presented above make a number of contributions to extant research.

First, by drawing on the knowledge-based view of the firm, we explain that managerial knowledge orchestration may affect the management of delays both positively or negatively**.** Indeed, M&A specialists have an in-depth understanding of the minutiae of the acquisition process (Trichterborn et al., 2016) and thus, are able to manage and pace integration processes appropriately. Generalists, in turn, understand the contextual constraints of a particular business, the ins- and -outs of their respective functions, roles in the organization, and the corresponding daily business. Thus, as acquisitions differ (Bower, 2001), our findings imply that it is not the specific type of managerial knowledge that matters, but the allocation and skilled orchestration of different knowledge types to specific situations that allows acquirers to mitigate delays during integration. These findings are important as they contribute to the ongoing discussion of the implication of managerial knowledge on organizations (Zander & Kogut, 1995) by giving explicit insights into the specific knowledge attributes and their effects on specific strategic subprocesses. Further, this knowledge orchestration approach to mitigating delays complements extant research on delays in the following ways. Firstly, whilst outcomes and antecedence of delays have been previously discussed through behavioral, competitive, and learning lenses (Luoma et al., 2017; Gans, Hsu & Stern, 2008; Rahmandad & Gary, 2020; Rahmandad, 2008; Elfenbein & Knott, 2015),

there is very little research focusing on delay mitigation from a knowledge-based and resource orchestration perspective. As a result, our findings contribute to the strategic delay and knowledge orchestration literature by differentiating between two different types of managerial knowledge (M&A specialists and M&A generalists), impacting strategic processes and their delays.

Second, our empirical evidence on when managerial knowledge mitigates delays or not, provides deeper insights into the process of synergy realization (Wang et al., 2020). Interestingly, while the realization of revenue-enhancing synergies is impacted by managerial knowledge orchestration, this does not hold for cost-cutting synergies. Cost synergies are controllable, easier to realize, and more tangible (Sirower & Sahni, 2006), resulting in an immediate impact on accounting performance (Damodaran, 2005; Rappaport, 1986). As a result, performance effects are more immediate. Contrary to cost synergies, revenue-enhancing synergies display less immediate performance effects and provide enough time for managers to mitigate the negative effects of delayed integration processes. This differentiation substantially adds to prior research. Feldman & Hernandez (2020) pointed to the need to better understand synergy realization and conceptualized that synergy lifecycles differ. By reporting empirically, that cost and revenue-enhancing synergies differ in their sensitivity to delays in combination with knowledge orchestration, we show that this is due to different lifecycles and the time scales they impose on organizations. These findings might prove to be useful for future research as they may provoke new ideas on organizational boundaries, generate insights on synergy realization conflicts and acquisition performance.

Third, we contribute to the ongoing discussion on the effects of knowledge on organizational speed by emphasizing the importance of knowledge orchestration. Prior

research already highlights that speed matters by shifting salience to those attributes of knowledge that increase or decrease the speed of knowledge transfer (Kogut & Zander, 1995, Zahra et al., 2000). Indeed, as competitive pressures increase, the ability to leverage knowledge resources across the organization becomes of crucial importance (Cui et al., 2005; Demarest, 1997). These dynamics affect innovation, the success of market expansion as well as acquisitions (Giustiziero et al., 2019; Lamont et al., 2019; Lieberman 1989: Anderson & Tushman, 1989). This Prior research findings contributed to a better understanding of how knowledge attributes effect speed through an internal knowledge replication and knowledge relational lenses. Kogut & Zander (1995), identified that different types of knowledge and the degree to which knowledge is codifiable and teachable increase the speed of internal replication. McEvily & Chakravarthy (2002) revealed that the degrees of tacitness and complexity of a focal firm's technological knowledge reduces the speed of competitors to imitate products (McEvily & Chakravarthy, 2002). Furthermore, knowledge attributes such as source attractiveness, the intent to learn, and relational quality prove to be important to increase the speed of knowledge transfers (Pérez-Nordtvedt et al., 2008). These findings gave insights on the importance attributes of knowledge and their direct effects on successful knowledge allocation within and across organizations. We contribute to this literature by introducing knowledge orchestration as an additional perspective to untangle the knowledge-speed relationship. While previous research on the speed-knowledge relationship focused on the speed of knowledge transfer or speed to imitate knowledge, we show that not only the attributes of knowledge matter but additionally the appropriate orchestration of these knowledge attributes. Thus, knowledge orchestration and knowledge attributes are both important to improve the speed of organizational processes. Our findings show that knowledge attributes such as specialization or

generalization are more sensitive to certain organizational processes and have positive or negative effects on speed. However, only through appropriate knowledge orchestration, organizations are able to mitigate delays in organizations. Furthermore, these findings might prove to be useful, as they open up the discussion of the impact of generalized or specialized managerial knowledge on organizations (Grant, 1996).

Combined, our findings contribute to the understanding that the appropriate fit between managerial knowledge (M&A specialists & M&A generalists) and integration processes are crucial to achieving timely synergy realization. Furthermore, we present empirical data showing that delays in integration activities strongly impact the realization of synergies. While the effect of delays on cost synergies is independent of who manages integration, revenue-enhancing synergies require the careful allocation of different managerial resources.

Limitations

In order to assess acquisitions and their strategic contribution, integration can take up to five years to impact performance. As a result, acquisition-related research based on surveys is faced with conflicts of reliable measurements due to the capacity of recollection. A longitudinal research design would provide several benefits to counter this disadvantage. However, due to managerial turnover and lack of willingness to participate in surveys over a long period, longitudinal studies are deemed to be impractical in acquisition research. Furthermore, to measure the impact of acquisition integration of up to 5 years (Ellis et al., 2009; Homburg & Bucerius, 2005; Zollo & Meier, 2008) imposes additional complications when considering a longitudinal design. Lastly,

the number of observations and its correlation to statistical power might impose an additional limitation. However, as this is the first paper to observe schedule delays in the context of acquisitions, we have no studies to compare our results to.

Conclusion

Overall, this study provides strong evidence that delays in acquisition integration activities and the differential use of M&A specialists and generalists, influence synergy gains. We show that human and functional integration delays significantly reduce revenue-enhancing synergies and, therefore, destroy value in acquisitions. However, M&A specialists and M&A generalists prove to be highly relevant in managing delayed acquisition integration and in driving acquisition performance indirectly. Overall, we suggest that integration schedules and different types of synergies should receive more scholarly attention in the context of acquisitions. Combined, our results suggest that managerial knowledge can be both detrimental and beneficial to realizing acquisition integration synergies. Decision makers need to consider an appropriate knowledge to task fit to generate positive outcomes and to avoid the costs associated with a knowledge to task missfit. We hope that our study stimulates further research questions in the field of knowledge orchestration, integration, and the management of synergies in the context of acquisitions.

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Paper 3: False Friends: How Acquirer And Target CEO Similarity Affects Shareholder Value

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Abstract: Using a multi-modal machine learning method to identify the five-factor model of personality, the study delineates between CEO personalities from acquirer and target CEOs. Based on data from 216 M&A transactions, I find that the similarity between acquirer and target CEOs positively affect acquisition premiums. Further, the findings show that the relationship between CEO similarity and acquisition premiums is pronounced in related industries. By considering how acquirer and target CEOs' personalities influence acquisition outcomes, this study contributes to the emerging literature on CEO dyadic interactions in the upper echelon theory.

Keywords: Mergers and Acquisitions, CEO, Big Five, Acquisition Premium, Upper Echelon Theory

Introduction

Over the past two decades, CEO personality has emerged as an eminent topic in strategic management research (Chatterjee and Hambrick, 2007; Chin et al., 2013; Hiller & Hambrick, 2005). As CEOs hold a key position in the firm that dominate and disproportionately influence firm activities (Finkelstein et al., 1996), they are key individuals in setting and guiding strategic direction (Calori, et al., 1994; Gioia & Chittipeddi, 1991). Thus, the CEO's personality has a major influence on the strategic behavior (Peterson et al., 2003) and the success of the firm (Nadkarni & Herrmann, 2010). For example, Malhotra (et al.,2018) report that extroverted CEOs can strongly influence the growth path of a firm by prioritizing acquisitions as a growth instrument. The above literature indicate that CEO personality plays a key role in corporate acquisitions. However, despite the strong influence of a CEO's personality on the strategy of the firm to grow and manage acquisitions, the personality of the target CEO is also decisive. The interaction of dyadic personalities is especially critical for acquisitions in which both target and acquirer CEO determine the outcome, such as the acquisition premium.

Drawing on the upper echelons theory (Hambrick, Mason, 1984; Hambrick, Finkelstein, & Mooney, 2005) and prior research on the impact of CEO personality on acquisition outcomes (Hayward & Hambrick, 1997; Malhotra et al., 2018), I argue that acquirer and target CEO personality similarity is an influential variable, altering the outcome of acquisitions. While it holds that acquisition premiums are affected by CEO narcissism (Chatterjee & Hambrick, 2011), hubris (Hayward & Hambrick, 1997), and CEO power (Fralich & Papadopoulos, 2018), little research has been focused on the impact of acquirer-target personality similarity on acquisition outcomes. The

entanglement of dyadic interactions, especially for acquisitions, is important (Aktas et al. 2016; Pavicevic, et al., 2019) as acquisitions involve intense negotiations, giving both acquirer and target CEO paramount importance, affecting the outcome of acquisitions. As a result, the study delineates between acquirer and target CEO similarity to give more insights on the importance of dyadic interactions of CEOs and acquisitions. Thus, research on the similarity of upper echelon individuals is important as it opens up a contextual perspective on how personality and its interaction with peers alter strategic behavior. Combined, I argue that the acquirer-target similarity and its implication is a crucial variable, affecting shareholder wealth.

To test this relationship, I collected publicly available video data for 236 unique CEOs of S&P500 listed companies engaged in M&A transactions from the period 2009 to 2020. To measure the Big Five personality traits (extraversion, agreeableness, openness, consciousness, neuroticism) of CEOs, a multi-modal machine learning method, extracting spoken, facial, and gesture data from videos was applied (Poria et al., 2017). Multi-modal machine learning proves to be a useful method in personality predictions due to its increased reliability compared to previous methods, achieving accuracy rates ranging from 81.3% to 91.7% (Kindiroglu et al., 2017; Gucluturk et al., 2017). The findings show that CEO similarity and acquisition premiums are positively related. Personality similarity increases acquisition premiums due to biased decision-making based on interpersonal affinity, promoting favoritism, and mutual conformity (Lee et al., 2020; Byrne, 1971). Furthermore, the results show that the relationship between CEO similarity and acquisition premiums is positively moderated when acquisitions are industry-related.

Therefore, this study aims to contribute to existing research in two primary ways. First, this research complements prior research on CEO similarity, by emphasizing the importance of dyadic CEO relationships, affecting strategic behavior (Shi et al., 2019; Buchholtz et al., 2003). To the best of my knowledge, with the exception of Aktas et al.' s (2016) investigation of the effects of acquirer-target narcissism, there is no research that focusses on the similarity of acquirer-target personality to better understand acquisition outcomes. Furthermore, this study complements existing literature by explicitly disentangling the relationship between CEO similarity and acquisition premiums (Pavicevic & Keil, 2021; Hayward & Hambrick, 1997). This is important, as it gives us insights on how personality affects shareholder wealth.

Second, this paper makes an important methodological contribution by introducing a novel machine learning technique to analyses CEO personality. This study applies a multi-modal machine learning method, to extract data from spoken, facial and gesture to predict the personality of CEOs. This approach complements similar machine learning methods previously applied in strategic management studies (Choudbury et al., 2019; Harrison et al., 2020).

Theory Background

Drawing on the upper echelons theory, this study enhances our understanding on the relationship between CEO similarity and shareholder wealth. A critical contribution of the upper echelons theory is that executives' values, experiences, and personalities, in particular, influence the mental models and interpretation of CEOs (Hambrick, 2007). The underlying premise of this research is that executives are limited by their bounded

rationality due to complex, ambiguous, and heterogeneous situations they confront on a daily basis. As a result, their characteristics and personality become vital in how executives distill and process this information. CEO characteristics incite executives to tend toward certain choices by filtering how CEOs define their reality and respond to it (Finkelstein & Hambrick, 1996). As a result, firms' strategic actions become the echo of their executive leadership and underlying characteristics (Hambrick & Mason, 1984).

While previous research primarily focused on the CEO demographics and other executive characteristics to understand firm outcomes (Hambrick et al., 1996; Wiersema & Bantel,1992), recent research stressed the importance of the psychological characteristics of CEOs. As a result, scholars studied psychological characteristics such as hubris (Hayward & Hambrick, 1997; Chen, Crossland, & Luo, 2015), narcissism (Chatterjee & Hambrick, 2007; Zhu & Chen, 2015), and the five-factor model of personality traits (McCrae & Costa, 1987; Nadkarni & Herrmann, 2017; Harrison et al., 2020).

The five-factor model allowed researchers to adopt a robust and comprehensive model to assess the personality of CEOs (Peterson et al., 2003). As a result, there is a broad agreement that the five-favor model encases essential features of personality assessment (McCrae & Costa, 1997). To capture the different attributes of personality, the model possesses five comprehensive constructs (McCrae & John, 1992). *Extraversion* is the tendency to be sociable and expressive. *Agreeableness* represents the tendency to be compliant and act altruistically. *Conscientiousness* is the propensity to be dependable and focus on achievements. *Neuroticism* is the ability to be resilient toward stress and cope with extreme situations. *Openness to Experience* represents the tendency to be creative, thoughtful, and imaginative.

Researchers emphasized the importance of this model to explain the behavior of executives and their subsequent decision-making (Canella & Monroe, 1997; Peterson et al., 2003). Thus, particular CEO characteristics and personality traits have become critical determinants in research to understand behavior and decisions that create or destroy value (Miller & Toulouse, 1986; Hayward & Hambrick, 1997; Chatterjee & Hambrick, 2007). For example, Malhotra and colleagues (2017) provided evidence that extroverted CEOs conduct larger acquisitions more frequently and are more likely to succeed. On the contrary, research reported that narcissistic and overconfident CEOs pay higher acquisition premiums (Hayward & Hambrick, 1997; Chatterjee & Hambrick, 2011).

Especially, CEO research in combination with acquisition premiums, offered intriguing insights into executives' behavior and decision-making. Researchers consider the variable a vital indicator to shed light on more complex behavioral processes (Haunschild, 1994; Hayward & Hambrick, 1997; Kim, Haleblian, & Finkelstein, 2011; Roll, 1986). For example, Laamanen (2007) reported that firm behavior is driven by information advantages that increase acquisition premiums, even though stock markets might react negatively. Furthermore, acquisition premiums are vital information that influences decision-makers heuristics and subsequent acquisitions (Malhotra et al., 2014). Thus, by linking CEO characteristics with acquisition premiums, research offered novel insights into the behavior of CEOs that directly or indirectly affect value creation (Sam et al., 2015; Fieberg et al., 2021).

Moreover, CEO characteristics affecting firm behavior and strategic outcomes are also sensitive to their social context. There may be situations in which peers' characteristics directly influence CEOs' decision-making. Especially similarity between

CEOs and peers has provided intriguing results, untangling the social implications of similar characteristics on decision-making. For example, Zhu and colleagues (2021) reported that CEO similarity led to biased CEO succession and suboptimal resource allocation. Hutzschenreuter & Kleindienst (2015) reported that CEO similarity leads to the abuse of informal power mechanisms to influence CEO succession.

Additionally, research reports that CEO similarity results in wasteful compensation packages (Belliveau et al., 1996; Young & Buchholtz, 2002). Thus, CEO similarity is vital in providing new insights into how CEOs' personalities influence decision-making and value creation. Moreover, the consequences of similarity become even more crucial in acquisitions, in which both the acquirer and target CEO are paramount decision-makers. For example, Aktas and colleagues (2016) pointed out that the acquirer and target CEO are vital in the negotiation process, jointly determining the outcome of acquisitions. Thus, CEO similarity might be an essential variable to gain more insight on the relationship between CEO characteristics interacting with peers and jointly effect firm outcomes such as acquisitions.

Hypotheses Development

CEO Similarity and Industry Relatedness

Drawing on upper echelons theory, the study argues that acquirer-target CEO personality similarity affects acquisition premiums positively. Prior research identified that personality similarity positively affects interpersonal affinity towards each other (Montoya & Horton, 2004), leading to more conformity and amiability between similar individuals. Additionally, similarity between individuals leads to preferable interactions

(Byrne, 1971), interpersonal attraction, and trust (Huang & Iun, 2006; McPherson et al., 2001; Ragins, 1997). Thus, similarity promotes a more favorable attitude and treatment (Lee et al., 2020). However, while a certain amount of similarity has positive effects on collaboration among top executives (O'Reilly et al., 1993; Wagner et al., 1984), similarity also promotes favoritism (Zajac & Westphal, 1996), which results in adverse outcomes for organizations. For example, CEO similarity results in biased CEO succession and suboptimal resource allocation within an organization (Zhu et al., 2021; Hutzschenreuter & Kleindienst, 2015). Additionally, similarity impacts CEO compensation by reducing compensation restrictions making them less confined and controlled by pay performance criteria (Young & Buchholtz, 2002), resulting in overall higher compensations for CEOs (Belliveau et al., 1996). Combined, based on the attraction-perspective, similarity promotes favoritism in dyadic relationships (Tajfel, 1982), resulting in subjective decision-making. Thus,

> **Hypothesis 1***: Acquirer-target CEO similarity is positively related to increased acquisition premiums.*

Additionally, the study argues that the relationship between CEO similarity and acquisition premiums is positively moderated by industry relatedness. In the context of relatedness, empirical evidence suggests that acquirers pay increased acquisition premium when targets are related (Gondhalekar et al., 2004), improving the target's willingness to accept industry-related takeovers (Wong & O'Sullivan, 2001). Furthermore, research indicates that related acquisitions generate higher expected returns compared to unrelated acquisitions (Berger & Ofek, 1995, Rumelt, 1982). Also, Jemison & Sitkin (1986) show that related acquisitions are perceived as less risky, due to lower information asymmetries, and higher levels of comparable business knowledge. Thus,

acquirer CEOs are more reassured to capture larger fractions of synergies and successfully integrate the target. Combined, the study argues that the combination of biased reassurance to extract value from related targets and favoritism due to CEO similarity affect the acceptance and willingness to pay higher premiums. Consequently, the following hypothesis is proposed,

> **Hypothesis 2:** *Industry relatedness positively moderates the relationship between CEO similarity and acquisition premium.*

Method

Sample and Data Collection

The sample combines M&A data extracted from the SDC database from the period 2009 to 2020. Also, CEO Big Five personality measurements from publicly available recorded video content of acquirer and target CEOs were collected. The sample focused on acquirers in the S&P500 index and deals where the acquirer controls more than 50% of the target. The study started with a sample of 826 M&A acquisitions. However, several measure were undertaken that reduced the sample. For example, following the guidelines discussed by Aktas et al., (2016), only deals greater than $1 million were included and targets that are not publicly listed were excluded. Further, all observations with missing target size or acquisition value were removed. After collecting information on the required control variables for the target and acquirer, only 404 deals were left. Merging the M&A sample with the acquirer and target CEOs Big Five personality measurements, left a sample size of 216 observation with 236 unique CEOs.

Further data was obtain from Compustat to compute financial data, control variables and dependent variable for the analysis.

Independent and Dependent Variables

CEO Personality was measured using a multi-modal machine learning approach that has been previously applied by Kindiroglu et al., (2017) and Gucluturk et al., (2017), which uses spoken, facial, and gesture that are observed in recorded videos of individuals. Research in the field of strategic management is increasingly utilizing machine learning to measure personality traits along with uni-modal approaches through text or facial detection (Harrison et al., 2020; Choudhury et al., 2019). These approaches achieved an accuracy rate of 57.99% in case of text or 64.84% in case of audio data (Majumder et al., 2017; Valente et al., 2012). However, uni-modal approaches neglect some criteria (text combined with facial detection) that help to accurately measure personality (Poria et al., 2017). This is important, because the combination of multiple data sources improves the accuracy of personality measurement. As a result, multi-modal approaches address these shortcomings and provide improved accuracy rates ranging from 81.3% to 91.7% (Kindiroglu et al., 2017; Gucluturk et al., 2017). Thus, a multi-modal machine learning approach was applied in this study.

Acquirer-Target Personality Similarity measured the similarity between the acquirer and target by measuring the similarity of their Big Five personality traits. Like Harrison & Klein (2007), the Euclidian distance of all personality traits is calculated by taking the inverse of the square root of the average sum of the squared difference in the five traits. The applied equation is explained below:

$$Personality\ Similarity_{i,t} = \sqrt[2]{\frac{\sum_{j=1}^{5}(Acquiror_{j,i,t} - Target_{j,i,t})^2}{5}}$$

Acquisition Premium: The construct of acquisition premium continues to be an important variable in determining the outcome of acquisitions (Choi et al., 2015; Laamanen, 2007; Malhotra et al., 2015). Recent research argued that acquisition premiums do not serve as an indicator for value destroying behavior or low-quality decision-making (Laamen, 2007). Despite this criticism, I follow Hayward's & Hambrick's (1997) argument that acquisition premiums serve as primary source to measure the destruction of shareholders' wealth in the short and long term. The study uses this measurement despite previous criticism, due to the following reason. While previous findings demonstrated that acquisition premiums do not account for value destruction in acquisitions, the sample reporting the criticism only included innovation driven acquisitions. However, this sample cover all acquisition irrespective of the motive. Thus, the study measures premium as the value paid by the acquirer deflated by the target's value four weeks to the acquisition (Aktas et al., 2016).

$$Acquisition\ Premium = \frac{Acquisition\ value\ Paid}{Target\ value\ 4weeks\ prior}$$

Regression Model

The study deploys the following regression to investigate the effect of acquirer or target personality on the acquisition premium for the period 2009 to 2020.

$$Premium_{it} = \alpha_0 + \alpha_1 Personality_{it} + \sum \alpha_k Controls + \varepsilon_{it}$$

Premium is the value paid delated by the target value four weeks prior to the acquisition. Personality is the acquirer and target Big 5 personality measurement discussed above.

Control Variables

The study included nine control variables that could affect the analysis, which are defined in Table 1 below. The table provides a detailed description of the key variables used in the study with sources. All continuous variables are winsorized at 1%.

Firm related	Description	Source
Profitability	Operating income before depreciation scaled by the book value of totals assets	Compustat
Research and Development	Ratio of Research and development cost to total asset	Compustat
Firm Cash	Cash and short-term investments scaled by the book value of total assets.	Compustat
Market to Book	Market value of Asset scaled by the book value of asset.	Compustat
Firm Size	Natural logarithm of the book value of total assets.	Compustat
Book Leverage	Long-term debt plus current debt, scaled by book value of asset.	Compustat
Cash Acquisition Indicator	This is an indicator variable equal to one if acquisition payment is made by more than 50% cash zero otherwise.	SDC
Multi Bidder Indicator	An indicator variable equal to one if there are more than one bidder for the deal and zero otherwise.	SDC
Target Size	The natural log of the total asset of the target prior to the acquisition.	SDC

Table 9 Control variables

As the regression is affected by other variables, the study implements several controls to measure for the robustness of the regressions. First, despite past research discussing the impact of firm size, profitability and market to book ratios as control variables, affecting acquisition premiums (Moeller et al., 2004), the study identifies no significant impact on the analysis. Thus, I concluded that the uniqueness of the personality variable and the modest sample size compared to other studies might be a reason for these insignificant results. Second, the study controls for acquisition characteristics such as multiple bidder, cash acquisitions and acquisition size. In the

results, a positive and strong significant relationship between acquisition premium and cash payment is found. In turn, the same positive and strong significant relationship for acquisition premium and multiple bidder exists. However, a negative relationship between target firm size and acquisition premium, which is strongly significant has been found. As a result cash acquisitions; multi bidder and target firm size affect the results of this study while all other controls remain insignificant.

Results

Table 2 contains summary statistics for all variables in the analyses.

Variables	N	Mean	SD	Min	Median	Max
Acquiror Agreeableness	216	0.561	0.094	0.328	0.582	0.718
Acquiror Extraversion	216	0.573	0.100	0.339	0.575	0.742
Acquiror Openness	216	0.591	0.099	0.346	0.601	0.757
Acquiror Conscientiousness	216	0.512	0.128	0.256	0.513	0.758
Acquiror Neuroticism	216	0.425	0.103	0.237	0.413	0.714
Target Agreeableness	216	0.570	0.096	0.316	0.577	0.791
Target Extraversion	216	0.586	0.099	0.332	0.591	0.757
Target Openness	216	0.594	0.100	0.363	0.594	0.796
Target Conscientiousness	216	0.522	0.124	0.275	0.530	0.758
Target Neuroticism	216	0.414	0.096	0.221	0.401	0.661
Acquiror-Target Personality Similarity	216	0.099	0.082	0.000	0.093	0.331
Acquiror-Target Agreeableness Similarity	216	0.079	0.084	0.000	0.058	0.352
Acquiror-Target Extraversion Similarity	216	0.083	0.089	0.000	0.048	0.304
Acquiror-Target Openness Similarity	216	0.077	0.083	0.000	0.053	0.332
Acquiror-Target Conscientiousness Similarity	216	0.111	0.114	0.000	0.076	0.423
Acquiror-Target Neuroticism Similarity	216	0.086	0.089	0.000	0.058	0.349
Acquisition Premium	216	0.608	0.496	0.000	0.817	2.095
Firm Size	216	10.528	1.389	7.773	10.427	14.095
Firm Profitability	216	0.160	0.075	0.011	0.151	0.407
Research and Development	216	0.033	0.057	0.000	0.000	0.246

Capital Expenditure	216	0.042	0.042	0.000	0.026	0.178
Market to Book	216	2.135	1.115	0.955	1.797	6.132
Firm Cash	216	0.152	0.152	0.000	0.091	0.579
Book Leverage	216	0.387	0.274	0.000	0.332	1.372
Cash Acquisition	216	0.218	0.414	0.000	0.000	1.000
Multi Bidder	216	0.037	0.189	0.000	0.000	1.000
Target Firm Size	216	8.379	2.435	0.000	8.436	13.752

Table 10: Summary statistics

The results explain a substantial amount of variance in acquisition premium, with acquirer CEO openness (R^2 = 0.536) and CEO similarity (R^2 = 0.59). For testing the hypotheses, the study applied OLS regressions with industry and year fixed effects, while standard errors clustered by firms. For hypothesis 1, Table 11 shows the OLS regression results between acquirer-target CEO similarity and acquisition premiums. Results indicate that overall acquirer-target CEO similarity result in increased acquisition premium, the study finds empirical evidence (β = 0.924; t = 2.26). Economically, the results mean that CEO similarity leads to favoritism and subjective decision-making, when it comes to evaluating and negotiating premiums. The reported results are economically meaningful; the coefficient (0.924) of the acquirer-target similarity is significant at 5%. Economically, there is a positive relationship between acquirer-target similarity and acquisition premium.

For hypothesis 2, anticipating that industry relatedness moderates the relationship of CEO similarity and acquisition premium, I find empirical evidence. CEOs with similar personality and in the same industry classification have a positive relationship with acquisition premiums. This result compared to the previous results in hypothesis 1 (β = 0.924; t = 2.26), I find the coefficient to be stronger for firms in the same industry (β =

1.829; t = 1.99). Table 12 and Figure 9 shows the moderating effect of industry relatedness on acquirer-target CEO similarity and acquisition premiums.

Dep. Var: Premium	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Acquirer-Target Personality Similarity	0.924**					
	(2.26)					
Acquirer-Target Agreeableness Similarity		0.407				
		(1.02)				
Acquirer-Target Extraversion Similarity			0.602			
			(1.38)			
Acquirer-Target Openness Similarity				0.516		
				(1.27)		
Acquirer-Target Conscientiousness Similarity					0.614*	
					(1.87)	
Acquirer-Target Neuroticism Similarity						0.809**
						(2.01)
Firm Size	0.003	0.000	0.002	-0.001	0.002	0.000
	(0.11)	(0.01)	(0.05)	(-0.03)	(0.07)	(0.00)
Firm Profitability	-0.908	-1.065	-1.097	-0.943	-0.897	-0.999
	(-1.06)	(-1.21)	(-1.26)	(-1.06)	(-1.07)	(-1.19)
Research and Development	-0.488	-0.648	-0.432	-0.702	-0.598	-0.348
	(-0.53)	(-0.70)	(-0.44)	(-0.76)	(-0.65)	(-0.37)
Capital Expenditure	-0.660	-0.450	-0.536	-0.588	-0.722	-0.531
	(-0.52)	(-0.36)	(-0.42)	(-0.48)	(-0.58)	(-0.41)
Market to Book	0.052	0.046	0.048	0.048	0.053	0.062
	(0.91)	(0.78)	(0.80)	(0.81)	(0.92)	(1.08)
Firm Cash	-0.144	-0.168	-0.173	-0.177	-0.122	-0.194
	(-0.41)	(-0.47)	(-0.49)	(-0.50)	(-0.34)	(-0.56)
Book Leverage	0.281*	0.326**	0.298*	0.322**	0.260	0.285*
	(1.74)	(2.09)	(1.87)	(2.03)	(1.55)	(1.77)
Cash Acquisition	0.278***	0.272***	0.276***	0.271***	0.278***	0.269***
	(3.47)	(3.32)	(3.38)	(3.34)	(3.43)	(3.42)
Multi Bidder	0.570***	0.587***	0.567***	0.571***	0.579***	0.596***
	(3.19)	(3.22)	(3.17)	(3.22)	(3.05)	(3.38)
Target Firm Size	-0.070***	-0.071***	-0.072***	-0.071***	-0.072***	-0.072***
	(-3.51)	(-3.46)	(-3.57)	(-3.45)	(-3.55)	(-3.60)
Cons	1.278**	1.412**	1.347**	1.357**	1.365**	1.370***
	(2.42)	(2.57)	(2.41)	(2.43)	(2.55)	(2.73)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	216	216	216	216	216	216
R-sq	0.590	0.579	0.583	0.581	0.588	0.588

t statistics in parentheses
* p<0.1 ** p<0.05 *** p<0.01

Table 11: Acquisition premium and acquirer-target similarity

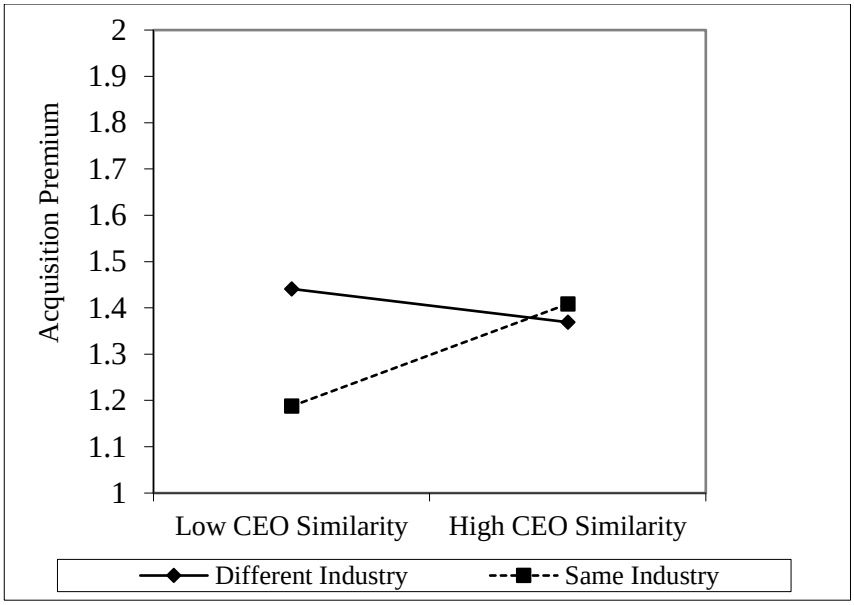

Figure 9: Interaction effects

Acquiror-Target Personality, Same Industry Acquisitions and Premiums

	(1)	(2)	(3)	(4)	(5)	(6)
Same Industry	**-0.290****	**-0.241****	**-0.239****	**-0.191***	**-0.271****	**-0.267****
	(-2.08)	(-2.18)	(-2.14)	(-1.88)	(-2.32)	(-2.24)
Acquiror-Target Personality Similarity	**-0.452**					
	(-0.62)					
Acquiror-Target Agreeableness Similarity		-0.474				
		(-0.90)				
Acquiror-Target Extraversion Similarity			-0.406			
			(-0.70)			
Acquiror-Target Openness Similarity				-0.142		
				(-0.28)		
Acquiror-Target Conscientiousness Similarity					-0.286	
					(-0.66)	
Acquiror-Target Neuroticism Similarity						-0.361
						(-0.59)
Acquiror-Target Personality Similarity*Same Industry	**1.829****					
	(1.99)					
Acquiror-Target Agreeableness Similarity*Same Industry		1.302				
		(1.60)				
Acquiror-Target Extraversion Similarity*Same Industry			1.480			
			(1.60)			
Acquiror-Target Openness Similarity*Same Industry				0.708		
				(0.84)		
Acquiror-Target Conscientiousness Similarity*Same Industry					1.405**	
					(2.17)	
Acquiror-Target Neuroticism Similarity*Same Industry						1.663*
						(1.82)
Firm Size	-0.001	-0.007	-0.009	-0.006	0.001	-0.006
	(-0.02)	(-0.21)	(-0.29)	(-0.20)	(0.04)	(-0.19)
Firm Profitability	-0.713	-0.896	-0.916	-0.931	-0.601	-0.744
	(-0.86)	(-0.97)	(-1.04)	(-1.04)	(-0.75)	(-0.93)
Research and Development	-0.570	-0.604	-0.599	-0.539	-0.620	-0.403
	(-0.61)	(-0.61)	(-0.59)	(-0.56)	(-0.68)	(-0.43)
Capital Expenditure	-0.643	-0.544	-0.536	-0.475	-0.754	-0.540
	(-0.50)	(-0.43)	(-0.42)	(-0.37)	(-0.59)	(-0.43)
Market to Book	0.043	0.048	0.051	0.045	0.036	0.048

	(0.70)	(0.75)	(0.81)	(0.72)	(0.61)	(0.79)
Firm Cash	-0.218	-0.245	-0.271	-0.268	-0.195	-0.257
	(-0.64)	(-0.72)	(-0.79)	(-0.77)	(-0.56)	(-0.76)
Book Leverage	0.337*	0.363**	0.357**	0.326**	0.302	0.343**
	(1.94)	(2.22)	(2.12)	(2.01)	(1.65)	(2.01)
Cash Acquisition	0.252***	0.248***	0.253***	0.251***	0.256***	0.262***
	(3.36)	(3.20)	(3.24)	(3.12)	(3.41)	(3.42)
Multi Bidder	0.524***	0.527***	0.542***	0.553***	0.516**	0.559***
	(2.74)	(2.89)	(2.95)	(2.94)	(2.61)	(3.00)
Target Firm Size		-	-	-	-	
	-0.07***	0.065***	0.066***	0.067***	0.066***	-0.065***
	(-3.21)	(-3.09)	(-3.18)	(-3.18)	(-3.17)	(-3.12)
Cons	1.453***	1.620***	1.509***	1.570***	1.415**	1.533***
	(2.73)	(2.85)	(2.63)	(2.79)	(2.61)	(3.13)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	216	216	216	216	216	216
R-sq	0.606	0.597	0.601	0.593	0.610	0.607

t statistics in parentheses
* p<0.1 ** p<0.05 *** p<0.01

Table 12: Acquirer-Target Personality, Same Industry

Discussion

Previous acquisition related research has largely neglected the role of CEO similarity and industry relatedness on acquisition premiums. Consequently, this paper adopted a perspective connecting the relationships of CEO similarity promoting favoritism and its effects on shareholder wealth destruction. Thus, this research advances scholarly knowledge in two primary ways.

First, the paper contributes to upper echelons theory by emphasizing CEO relations as a decisive factor for acquisition success. To advance our understanding on how CEOs' characteristics influence firms, it is essential to link CEO characteristics with firm outcomes and understand the interrelation of CEO characteristics with their social context. As such, recent research provided new evidence that went beyond the traditional variables by focusing on similarities or dissimilarities of CEOs with top management teams, boards, committees, analysts, and other CEOs. For example, prior research identified that similarity between CEOs and committees responsible for decisions on compensation led to less confined and controlled compensation restrictions (Young &

Buchholtz, 2002). Furthermore, similarity between CEOs and financial analysts had immense effects on financial forecasts and firm valuation (Becker et al., 2019). These contributions are vital as these findings offer insights into how CEO characteristics and peers jointly influence firms (Georgakakis & Ruigrok, 2017; Belliveau & O'Reilly, 1996).

While CEO similarity has been identified to benefit firms by promoting collaboration among CEOs (O'Reilly, Snyder, & Boothe, 1993; Wagner, Pfeffer & O'Reilly, 1984), and building trust (Huang & Iun, 2006; McPherson, Smith-Lovin, & Cook, 2001), recent research suggests that CEO similarity might lead to adverse strategic outcomes (Zhu et al., 2021; Hutzschenreuter & Kleindienst, 2015). Most research identified favoritism as a problematic attribute of CEO similarity (Wiersema et al., 2018; Zajac & Westphal, 1996, Zhu et al., 2021). One crucial aspect of CEO favoritism lies in the identification of similar attributes or personalities that lead to preferential treatment, which results in suboptimal or destructive decision-making (Becker et al., 2019; Li et al., 2017; Yonker et al., 2017; Zajac & Westphal, 1996). For example, while similarity in personality might promote friendship and collaboration (Izard, 1960), in a professional environment, it causes misjudgment about the performance (Strauss et al., 2010). This finding is important, as misjudgment can be a primary source of value destruction in acquisitions (Hayward & Hambrick, 1997; Zollo, 2009). Research on similarity might be an important variable shedding light on the decision-making process, affecting value destruction in acquisitions. Thus, this study's findings complement this line of research by identifying the tendency of acquirer CEOs to overpay when engaging with similar target CEOs.

Second, the study introduces a novel machine learning method to complement prior research measuring CEO personality. Research in the field of strategic management is increasingly utilizing machine learning to measure personality traits along with uni-modal approaches through text or facial detection (Harrison et al., 2020; Choudhury et al., 2019). However, despite these advancements, uni-modal machine-learning methods that focus on text or voice analysis have reached modest accuracy rates ranging from 57.99% to 64.84% (Majumder et al., 2017; Valente et al., 2012). Thus to complement prior machine learning methods and improve accuracy rates when analyzing personalities, this study introduces a multi-modal machine learning method. A multi-modal approach goes beyond one variable of analysis by integrating and combining multiple sources of information (Morency & Baltrusaitis, 2017). As a result, multi-modal approaches integrate linguistic, acoustic, and visual data, resulting in accuracy rates ranging from 81.3% to 91.7% (Kindiroglu et al., 2017; Gucluturk et al., 2017). This approach complements prior research in the upper echelons domain and might support new research endeavors. For example, future research on the Big Five traits might untangle the relationship between agency-related outcomes like opportunism or corruption when investing in ESG (environmental, social, and governance criteria) assets. Furthermore, the Big Five are a strong predictor of team dynamics. As a result, new research might emerge that focuses on the decision-making effectiveness of CEOs in the context of corporate social responsibility. Lastly is to say that prior research emphasized the need to link linguistic data with video metric data to offer an extended range of variables describing CEO behavior (Harrison et al., 2018). As such, future research might provide insights into charisma and individual culture via video metric assessments and link them to the firm-level outcomes.

Managerial implications

This study also wields practical implications for boards and M&A managers, by opening up the discussion on the effects of CEO similarity on acquisition strategy. Because CEOs possess significant influence in guiding acquisition strategy, being aware of the effects of current or subsequent CEOs personality might alter acquisition management. As such, the results provide evidence that acquisitions with similar target and acquirer CEOs should be monitored, especially when the targets are within a related industry. This consideration might uphold two aspects to be considered when choosing a target. First, managers might become aware of the risk to overpay and introduce measures to improve negotiation or control CEO favoritism. Second, CEO similarity might be included as rejection criteria, when creating an acquisition shortlist.

Limitations

Despite the theoretical and methodological contributions, the dissertation is not free of limitations. First, there is a common limitation to any publicly available source which assesses the personality of CEOs concerning impression management (Graffin, Carpenter, & Boivie, 2011). As a result, it is to be acknowledged that CEOs are aware of being filmed and are therefore guarded about how they present themselves. This becomes a crucial barrier as the machine-learning software measures observable behavior to predict the personality of the CEOs. However, to some extent, multi-modal machine learning mitigates this risk as it relies on several factors to analyze the personality of an individual, which are, in combination, hard to control by a human being. Here, future

research might refine different measurements and draw on different approaches to mitigate impression management.

Second, despite the advantages and improved accuracy rates of multi-modal machine learning approaches, the algorithms used in the software are opaque to understand in detail. This might cause a problem in the understanding from a validity perspective. Even though it is possible to compare the results of the assessment with other methodical approaches, it is still unclear what unique causalities the algorithm created to generate the outcomes. Machine learning research continues to address these issues to reveal what micro learnings a network creates and continues to offer visual guidance to improve our understanding of the learning process of machines.

Third, comparing this study to other research investigating the relationship between CEO personality and firm behavior (Herrmann & Nadkarni, 2013; Nadkarni & Herrmann, 2010) several CEO control variables such as CEO age, education, tenure, and TMT size are missing. However, since the CEO similarity is affected by characteristics of the acquirer CEOs, which have direct effects on the propensity to acquire certain companies and to overpay, the results of this study might be limited.

Conclusion

Overall, the theory and findings of this study provides strong evidence that CEO similarity is an important dyadic characteristic that affects acquisition premium. This study shows that CEO similarity increases acquisition premium and that the interaction between CEO similarity and acquisition premium is positively moderated by industry relatedness. By focusing on how CEO personality is similar between acquirer and target

CEOs, the findings complement existing research focusing on either CEO to TMT or CEO to board similarity, while neglecting the interaction between acquirer and target CEOs.

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