Multiteaming at multiple levels
An individual and firm-level perspective on multiple team membership

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The President:

Prof. Dr. Thomas Bieger
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St.Gallen, January 2018

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<th>Description</th>
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<tbody>
<tr>
<td>Δ</td>
<td>Delta</td>
</tr>
<tr>
<td>α</td>
<td>Cronbach’s alpha</td>
</tr>
<tr>
<td>$AD_{M(p)}$</td>
<td>Average deviation index (relative to the mean of an item)</td>
</tr>
<tr>
<td>AOM</td>
<td>Academy of Management</td>
</tr>
<tr>
<td>b</td>
<td>b-coefficient (Standardized beta coefficient)</td>
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<tr>
<td>cf.</td>
<td>Confer</td>
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<tr>
<td>CI</td>
<td>Confidence interval</td>
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<tr>
<td>CFA</td>
<td>Confirmatory factor analysis</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative fit index</td>
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<tr>
<td>D</td>
<td>Simpson index</td>
</tr>
<tr>
<td>et al.</td>
<td>Et alii (and others)</td>
</tr>
<tr>
<td>e.g.</td>
<td>Exempli gratia (for example)</td>
</tr>
<tr>
<td>HR</td>
<td>Human resources</td>
</tr>
<tr>
<td>HRM</td>
<td>Human resources management</td>
</tr>
<tr>
<td>ICC</td>
<td>Intra-class correlation coefficient</td>
</tr>
<tr>
<td>i.e.</td>
<td>Id est (that is to say)</td>
</tr>
<tr>
<td>IFI</td>
<td>Incremental fit index</td>
</tr>
<tr>
<td>IMOI</td>
<td>Input-mediator-output-input</td>
</tr>
<tr>
<td>I-P-O</td>
<td>Input-process-output</td>
</tr>
<tr>
<td>IPO</td>
<td>Individual polychronic orientation</td>
</tr>
<tr>
<td>IPV</td>
<td>Inventory of polychronic values</td>
</tr>
<tr>
<td>ln</td>
<td>Natural logarithm</td>
</tr>
<tr>
<td>m</td>
<td>Slope</td>
</tr>
<tr>
<td>Max</td>
<td>Maximum</td>
</tr>
<tr>
<td>Min</td>
<td>Minimum</td>
</tr>
<tr>
<td>MTM</td>
<td>Multiple team membership</td>
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<tr>
<td>MTS</td>
<td>Muliteam system</td>
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<td>No.</td>
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PEM Productive energy measure

POE Productive organizational energy

r Pearson product-moment correlation coefficient

R² Coefficient of determination

SD Standard deviation

SME Small and medium-sized enterprise

SPSS Statistical package for the social sciences

SRMR Standardized root mean square residual

TFL Transformational leadership

TLI Tucker-Lewis Index

TMGT Too-much-of-a-good-thing (effect)

TMT Top-management team

VIF Variance inflation factor

WHO World health organization

WHO-5 World health organization’s 5-item well-being scale
Abstract

In many firms and industries, multiple team membership (MTM) is the norm rather than the exception. Despite its prevalence in organizational practice, however, research on multiteaming is limited in a number of ways. To complement prior research, this dissertation considers MTM structures as open and social systems. First, I provide evidence that the implications of multiteaming are not limited to the team-level, but also affect individual employees and the organization seen as a whole. Second, I advance current understanding of the multidimensionality and theoretical complexity of MTM. Third, I identify boundary conditions that help to turn MTM structures into successful systems of collaboration.

Study 1 uses a longitudinal sample of 341 employees and demonstrates that employees with a high polychronic orientation perceive reduced levels of role conflict at an increasing fragmentation of time across teams. Meanwhile, the opposite pattern applies to monochronics. Based on a sample of 85 firms, study 2 shows that an increasing MTM level yields positive effects on organizational social capital and firm performance. This relationship, however, only holds at low levels of MTM heterogeneity. Finally, in study 3, I investigate how MTM level affects productive organizational energy (POE) and firm performance in 82 organizations. The results reveal that only those organizations develop a strong climate of POE, in which hierarchical and shared leadership interact in a synergistic manner.

This dissertation draws on a social system logic (Katz & Kahn, 1978). In this sense, I refer to individual employees as human beings, rather than human resources. Moreover, I show that a mere focus on single teams is not capable of grasping interrelated systems of collaboration. In all, I provide evidence that MTM structure has the potential to foster both, the prosperity of single employees as well as the competitive advantage of entire organizations.
Zusammenfassung

In vielen Unternehmen und Industrien sind multiple Teammitgliedschaften (MTM) eher die Regel als die Ausnahme. Trotz der Verbreitung in der Unternehmenspraxis ist entsprechende Forschung in vielfacher Hinsicht limitiert. Um bestehende Literatur zu erweitern, betrachtet die vorliegende Dissertation MTM Strukturen als offene und soziale Systeme. Zum einen wird der Nachweis erbracht, dass die Implikationen von MTM nicht auf die Teamebene beschränkt sind, sondern auch Mitarbeiter und die gesamte Organisation betreffen. Zum anderen wird das gegenwärtige Verständnis bezüglich der Mehrdimensionalität und theoretischen Komplexität von MTM vertieft. Letztlich identifiziert die Arbeit auch Rahmenbedingungen, die helfen, MTM Strukturen in erfolgreiche Systeme der Zusammenarbeit zu entwickeln.


1 Introduction

“[H]uman assets differ from an oil field. Merely having talented employees does not mean that a sustainable advantage exists. Such assets are hard to imitate because they are difficult to understand and observe. [...] [H]ow can management organize employees to attain an advantage?”

(Coff, 1997, p. 374)

Employees are considered as a key driver of competitive advantage (e.g., Lepak & Snell, 1999). As the quote by Coff (1997) shows, however, achieving human capital-based advantage is not simply a question of hiring and developing a superior workforce, but equally one of organizational design. In search for the best way of structuring organizations, the past century has witnessed various approaches ranging from scientific management (Taylor, 1911), the human-relations approach (Mayo, 1933) or Weber’s (1946) model of bureaucracy to Drucker’s (1946) notion of federal decentralization and more recent approaches, such as project, team-based or matrix organization structures (e.g., Ashkenas, Ulrich, Jick, & Kerr, 2015). In 2018, practice and research are still searching for the ‘holy grail’ of organizational design. Thereby, in response to an increasing environmental complexity and acceleration of technological advancements, firms are adopting more and more dynamic, virtual and fluid structures (Gilson, Maynard, Young, Vartiainen, & Hakonen, 2015). According to Deloitte’s 2016 Global Human Capital Trends report, 92 percent of surveyed business and HR (human resources) leaders rate organizational design as a top priority, and nearly half report that their firms are either in the middle of a restructuring process or planning one (Deloitte, 2016). In this light, I feel certain that research on contemporary forms of organizational design has been and still is an important and worthwhile investment.
1.1 Theoretical relevance and research questions

Multiple team membership (MTM) represents one of these organizational design elements that have attracted considerable practical as well as scholarly attention recently (Bertolotti, Mattarelli, Vignoli, & Macri, 2015). On the one hand, surveys show that MTM is a common feature of many organizations (cf. chapter 1.2). On the other hand, scholars have started to investigate antecedents, conditions and consequences of MTM at the individual and team levels (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard, Mathieu, Rapp, & Gilson, 2012; O’Leary, Mortensen, & Woolley, 2011). Although this research has made significant contributions to our understanding of multiteaming, such as uncovering its multidimensionality (O’Leary et al., 2011) or establishing the link to individual and team performance (e.g., Cummings & Haas, 2012), it has not directly addressed the question raised above: how can management organize employees to attain an advantage? Or more precisely, does MTM involve a competitive advantage for entire firms?

Furthermore, prior work on MTM has not addressed what Coff (1997) describes in his metaphor of an oil field. Unlike other resources, human behavior is not simply rational or representative (Kirman, 1992), but also influenced by its context (e.g., culture, superiors, or co-workers) as well as individual emotions and cognitive capabilities (Coleman, 1990). In other words, whereas an oil field will not mind being extracted by ten oil pumps simultaneously, working in ten teams at a time may cause severe problems for employees, but also include several chances for personal development. Through the lenses of purely ‘rational’ theories, such as network, knowledge or attention-based views (e.g., Bertolotti et al., 2015; O’Leary et al., 2011), however, it is hard to grasp the side-effects of MTM for individuals and organizations. Therefore, in addition to addressing the assumption of MTM-based competitive advantage, I shift the perspective from ‘what individuals give to multiple teams’ to ‘what multiteaming gives to individuals’. Thereby, employees are not conceptualized as human resources, but as human beings. Following Coleman (1990), I do not
regard competitive advantage and employee needs as incompatible. Rather, I agree with Felin, Foss, Heimeriks, and Madsen (2012) who state that any research on competitive advantage must inevitably deal with human emotion, action and interaction. Based on a social system logic (Katz & Kahn, 1978), the present dissertation addresses the consequences of multiteaming for both, the individual employee and the firm seen as a whole.

Finally, I take up arguments that refer to MTM as a ‘double-edged sword’ (O’Leary et al., 2011; van de Brake, Walter, Rink, Essens, & Van der Vegt, 2017). As I will discuss in greater detail in the literature review of this dissertation (cf. chapter 1.4), prior research acknowledges that multiteaming enacts beneficial as well as detrimental effects on employees, teams, and organizations (Mortensen, Woolley, & O’Leary, 2007). For example, an increasing number of team memberships was found to foster work engagement and team performance, but also increases the perception of job strain among employees (Cummings & Haas, 2012; Mathieu, Maynard, Rapp, & Gilson, 2008; Pluut, Flestea, & Curșeu, 2014). Facing this ‘two-foldedness’, several studies (e.g., Bertolotti et al., 2015; Mortensen et al., 2007) call for research that uncovers potential boundary conditions of successful multiteaming (i.e., moderators at different levels of analysis). The present dissertation aims at contributing to this question by investigating the role of personality, multiteaming design, and leadership in MTM contexts. I believe that the disclosure of moderating conditions represents an important cornerstone in MTM research, as these ultimately represent the levers that organizational decision-makers can pull in order to create effective MTM structures.

In a nutshell, the present dissertation is guided by the following two core questions:

(RQ1) What are the implications of organizational multiteaming for both, individual employees and entire organizations?

(RQ2) What can organizations do to seize the positive, while avoiding the negative consequences of MTM structure?
I deliberately exclude the team level of analysis from my work, because several studies have already addressed the consequences and conditions of MTM for single teams (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; Mortensen et al., 2007; Mortensen, 2014; O’Leary et al., 2011). In sum, this research underlines the positive effects of MTM on single team performance. In order to evaluate the overall effectiveness of organizational multiteaming, however, I suggest that a broader perspective is needed: on the one hand, van de Brake et al. (2017) point out that referring to MTM as an outright beneficial human resources management (HRM) is critical, before its implications for individual employees are sufficiently understood. On the other hand, Wageman, Gardner, and Mortensen (2012, p. 309) argue that studying single teams is not capable of grasping the overall effectiveness of MTM structure. Thereby, they point to the importance of applying a more systemic perspective: “if workers’ efforts are stretched over several teams serving several clients, one client’s satisfaction may come at the expense of another’s. The team with the satisfied client may appear to be effective, but its ‘poaching’ of people’s time and effort from other teams is likely to be counterproductive for the organization”.

In all, I consider this dissertation as an overall package of extensions of previous MTM research. Guided by the above two core questions, I provide alternative viewpoints on multiteaming theory, conceptualization, moderators, mediators, and level of analysis.

1.2 Practical Relevance: to multiteam or not to multiteam?

In the last decade, the nature of collaboration has changed dramatically and at an increasing speed, leaving us with a changing ecology of teams and organizations (Wageman et al., 2012). According to Deloitte’s (2016) Human Capital Trends report, there are four main forces driving this development. First, demographic upheavals have made the workforce more diverse in many ways. Second, advancements in digital technologies are causing radical
disruptions in business models and in the way we work. Third, the rate of change has increased disproportionally, reinforcing the need for agility. Fourth, the social contract between firms and workers has changed, causing a shift towards so-called contemporary forms of work (Wageman et al., 2012). Firms must keep up with these developments, in order to remain competitive (Bruch, Block, & Färber, 2016) and attractive for employees (Bruch, Fischer, & Färber, 2015).

One way how organizations respond to this, is by changing the nature of collaboration of their teams (Mathieu et al., 2008; Tannenbaum, Mathieu, Salas, & Cohen, 2012; Wageman et al., 2012). Whereas teams were usually considered as “typically stable, usually full-time, and well-defined” (Cohen & Bailey, 1997, p. 242), they are now described as increasingly dynamic, heavily interlinked and overlapping, globally dispersed, or any combination thereof (Mortensen, 2014). Moreover, research indicates that multiteaming is “quite prominent these days” (Mathieu et al., 2008, p. 442). For example, U.S. and European surveys show that 65 to 95 percent of knowledge workers are members of more than one team at a time (O’Leary et al., 2011). In some companies it is even common to simultaneously work in ten or more teams (Mortensen et al., 2007; Zika-Viktorsson, Sundström, & Engwall, 2006). Using a sample of an Italian R&D unit, Bertolotti et al. (2015) report an average number of 8.92 team memberships, ranging from 5 to 13.5 teams. Yet, the application of MTM structures is not limited to so-called knowledge-intensive fields or jobs anymore. Rather, firms from all kinds of industries, such as banking, retail and construction, are starting to structure work as multiple (project) teams (Barley, Bechky, & Milliken, 2017). As Mathieu et al. (2008) express it: MTM is apparently more common than one would expect.

Despite its prevalence in organizations and its substantial implications for the conceptualization and effectiveness of teams (O’Leary et al., 2011), I agree with the perception of Mathieu et al. (2008): multiteaming has not received an equivalent level of attention. To the best of my knowledge and research on this topic, there are neither striking examples of firms succeeding or failing with
MTM, nor an advanced level of ‘expertism’ in the WWW (Godin, 2005) – particularly in comparison to other forms of contemporary work and collaboration. In order to substantiate this perception with figures, I conducted Google and Google Scholar searches for a selection of terms associated with the changing ecology of teams, such as MTM, multiteaming, virtual team, fluid team, global team, dispersed team, and distributed team (Mathieu et al., 2008; Tannenbaum et al., 2012; Wageman et al., 2012).

![Figure 1. Google (Scholar) hits for the changing ecology of teams](image)

*Note. Date of Google and Google Scholar searches: December 31, 2017*

As illustrated in Figure 1, the topics of MTM and multiteaming have received by far the least attention among those terms, especially concerning Google hits. Although I acknowledge that this procedure does not meet highest scientific standards, I still believe that it provides us with a pretty accurate picture of what practitioners and organizations have on their priority lists – and MTM seems not to be there. In search for explanations, I suggest that the unconcern of
organizational practice can be traced back to the apparent simplicity of multiteaming: whereas, for example, global team memberships inevitably include challenges of time shifts, digital communication and cultural differences (Tannenbaum et al., 2012), one might think that MTM ‘simply’ means that employees spread their working time across several teams. So what?

However, MTM structure and its consequences are far more complex. First, from a conceptual perspective, MTM does not only contain implications for how we study and manage teams, but also for how they are defined in the first place (Mortensen, 2014). In this vein, membership in multiple teams dismantles major parts of generally accepted team conceptualizations, such as Hackman’s (1987) definition as collections of individuals who see themselves and are seen as an intact social entity. Therefore, much of what has been discovered in single team research, cannot be taken for granted in MTM settings (Mortensen, 2014). In consequence, research and organizational practice are well-advised to not stick with existing assumptions and knowledge concerning the management of ‘classical teams’. Rather, it is important to explore the unique characteristics of contemporary collaboration (Wageman et al., 2012) and embed the newly gained knowledge into the mindset of organizational leaders and employees.

Second, prior research clearly states that MTM is a multidimensional phenomenon (O’Leary et al., 2011). That is, the (average) number of team memberships only represents one aspect that has to be considered by organizational practice. Percentage of time spent on the focal team (Cummings & Haas, 2012; Maynard et al., 2012), team variety (O’Leary et al., 2011), multidisciplinary diversity (Mo & Wellman, 2016), fragmentation of time across teams (Pluut et al., 2014) and membership model divergence (Mortensen, 2014) are vivid examples of the complexity and multidimensionality of MTM (for a detailed description see chapter 1.4).

Finally, as mentioned before, the consequences of multiteaming are complex and twofold in nature. At the individual level, employees may experience increased levels of work engagement, but also suffer from high levels of strain
(Leroy, 2009; Pluut et al., 2014). At the team level, single teams may benefit from efficiency-oriented practices, thus increasing performance. Meanwhile, reduced opportunities to integrate knowledge and information across team members may lead to decreasing levels of team learning (O’Leary et al., 2011). At the organizational level, MTM structure includes strong motivational capacities as well as the potential to enhance intra-organizational collaboration (Mortensen et al., 2007; O’Leary, Woolley, & Mortensen, 2008). That being said, organizations also face a number of challenges related to coordination, intellectual property, and leadership of MTM structures (Mortensen et al., 2007). In this vein, organizations should not let themselves be blinded by the chances of organizational multiteaming, but carefully evaluate the pros and cons as well as deal with the management of such structures.

In sum, MTM is a very common and widespread form of organizational design. Moreover, it represents a relatively complex and multidimensional phenomenon, including intriguing chances, but also a number of risks and coordination problems. In contrast to this, however, relatively little attention has been paid to MTM by research (cf. also chapter 2.1) and particularly by organizational practice (cf. Figure 1). In this light, the relevance of my dissertation is twofold: on the one hand, it puts a spotlight on the complexity of MTM. On the other hand, its implications can serve as a guideline for organizations that actively use or consider to introduce MTM structures. In other words: to multiteam or not to multiteam?

### 1.3 Multiteaming – the next evolutionary step of organizational teams

As described in the beginning of this dissertation, firms are adopting various approaches to organizational design in order to attain a competitive advantage (Coff, 1997). Within respective considerations of organizational decision-makers, groups and teams have always played an important role (Mohrman, Cohen, & Mohrman, 1995). Also from a scientific perspective, we are able to draw on a rich and long tradition of team research (Mathieu et al., 2008). Most
of this research, however, assumes that people are members of one team at a time and do not face any competing commitments (Mortensen et al., 2007). Obviously, this contradicts wide parts of organizational reality (cf. chapter 1.2). Nevertheless, I consider multiteaming as the next evolutionary step of single team memberships and engage in a discussion of the history of teams, in order to position the topic of MTM relative to existing research. Thereby, I first present a brief overview of the origins of teams. Then I refer to the Input-mediator-output-input (IMOI) model of team research and finally elaborate on the positioning of MTM.

1.3.1 The origins of team research

The origins of teams or groups (following Cohen & Bailey, 1997, both terms are used interchangeably) can be traced back to the first third of the 20th century. During the 1920s, with Taylor’s (1911) ideas of scientific management still being the primary approach to work organization, little to no attention was given to teams. Rather, it was argued that groups are too complex to study and that group behavior can entirely be explained by studying individuals (Forsyth & Burnette, 2005). At the same time, however, the Western Electric Company had just begun its widely-known series of studies at the Hawthorne plant (Sundstrom, Meuse, & Futrell, 1990). Unexpectedly, the so-called Hawthorne studies revealed that team structure had positive effects on both, employee well-being and performance. This resulted in scientific controversies and prompted empirical research on teams for decades afterwards, also referred to as the human-relations movement (e.g., Mayo, 1933). Whereas social psychology, particularly Kurt Lewin and his research center for group dynamics, contributed significantly to the understanding of work teams during the 1940s and 1950s (Forsyth & Burnette, 2005), two decades later Steiner (1974, p. 94) and other social psychologists witnessed a gradual decline of team

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1 To limit the scope of this review, I focus on a relatively small selection of contributions to group/team research, which I believe hold significant implications for this dissertation. In so doing, I do not want to diminish the fundamental work of other group/team scholars in any way.
research in their field: “[w]hatever happened to the group in social psychology?” However, the interest of teams had not gone back, but simply spread to other disciplines, such as organizational behavior in particular.

This shift of team research towards the fields of management and organizational behavior becomes especially evident when tracing back past reviews on groups or teams. Whereas early reviews such as work by Hare (1976) or McGrath and Kravitz (1982) were exclusively located in social psychology (e.g., Annual Review of Psychology), more recent reviews were published in the Journal of Management (Bettenhausen, 1991; Cohen & Bailey, 1997; Gist, Locke, & Taylor, 1987; Mathieu et al., 2008; Mathieu, Tannenbaum, Donsbach, & Alliger, 2013), the Academy of Management Review (Marks, Mathieu, & Zaccaro, 2001), the Annual Review of Psychology (Ilgen, Hollenbeck, Johnson, & Jundt, 2005), or Industrial and Organizational Psychology (Tannenbaum et al., 2012). Altogether, these articles are more or less situated in the field of organizational behavior and represent the foundation for any study on teams, be it single or multiple memberships.

A detailed review of the past fifty years of team research would obviously go beyond the scope of this dissertation. I therefore decided to rather take a meta-level perspective and refer to a fundamental framework underlying most reviews on teams, the Input-Process-Output (I-P-O) model (Hackman, 1987). Moreover, I include extensions to this framework, such as the IMOI model (Ilgen et al., 2005), into my considerations (cf. Figure 2). Based on this, I outline core assumptions of team research and describe how these are influenced by current megatrends (cf. chapter 1.2).

1.3.2 From I-P-O to IMOI models

McGrath (1984) and Hackman (1987) were among the first to consider the nature of team performance in classic systems model ways: input leads to process leads to output. Although the resulting I-P-O framework represents a main cornerstone that guided team research for almost two centuries, critics argue
that it cannot grasp the entire complexity of teamwork (Moreland, 1996). Among others (e.g., Marks et al., 2001), Ilgen et al. (2005) particularly raise attention to three insufficiencies: first, many of the mediators that link team inputs to outcomes are not processes, but emergent cognitive or affective states (Marks et al., 2001). Second, the single-cycle linear nature of the I-P-O framework ignores potential feedback loops that link (past) team outcomes to input and intermediating factors. Third, the proposed linear progression of main effects (Hackman, 1987; McGrath, 1984) ignores potential interactions between inputs, processes and emergent states as well as the development of team composition and states over time. Facing these deficits, Ilgen et al. (2005) propose to use I-M-O-I models instead. Substituting ‘M’ for ‘P’ represents the broader range of mediating variables included into the framework, such as processes and states. The inclusion of a second ‘I’ reflects the notion of episodic cycles. Finally, the elimination of the hyphen between letters signifies the nonlinear or conditional nature of relationships (Mathieu et al., 2008; Mathieu et al., 2013). For a detailed summary of extant team research, I advise the reader to recent reviews on this topic (e.g., Mathieu et al., 2008; Mathieu et al., 2013).

The studies in the present dissertation follow the general process logic of the I-M-O-I framework. In that sense, I use different dimensions of MTM as inputs and investigate their effects on mediating and outcome variables. Furthermore, different moderators are included as important boundary conditions of successful multiteaming. Moreover, due its relevance for the present dissertation, I want to point out that team inputs as well as outcomes are not limited to the team level, but represent multi-level phenomena (Mathieu et al., 2008). In that sense, team inputs include individual-level member characteristics, team context, and the broader organizational-level context. Similarly, extant work argues that research on teams should not limit its focus to team-level outcomes, but also include consequences of teams at the individual and organizational levels (Mathieu et al., 2008). With regard to the individual level, Mathieu et al. (2008, p. 442) suggest investigating how “to best balance team composition needs with the desire to develop individual members [italics
removed]. With regard to the organizational level, Mathieu, Marks, and Zaccaro (2001) call for compilation models that link team-based designs to firm outcomes. The present dissertation addresses both suggestions (cf. chapter 1.5).

![Figure 2. The IMOI model of team research](image)

*Note.* IMOI = Input-mediator-output-input

*Source:* Mathieu et al. (2008, p. 413)

1.3.3 The changing ecology of teams

Having presented the origins of team research and its development into the 21st century, I now come back to what Wageman et al. (2012) describe as the changing ecology of teams. Any review on teams that has been published during the last decade unavoidably dealt with the changing nature of teams (e.g., Mathieu et al., 2008; Mathieu et al., 2013; Tannenbaum et al., 2012; Wageman et al., 2012). In contrast to earlier conceptualizations such as “typically stable, usually full-time, and well-defined” (Cohen & Bailey, 1997, p. 242), teams are now considered as dynamic and heavily interconnected.
(Mortensen, 2014). With respect to the IMOI model of team research, this means that team inputs such as member characteristics or the organizational and environmental context have changed dramatically. While the expected outcomes of teams have remained relatively stable (i.e. individual, team and firm performance, innovation, and affective outcomes; Mathieu et al., 2008), I argue that intermediary processes and states as well as potential moderating conditions need to be replicated and maybe even revised. This has substantial implications for individuals, teams, and organizations: do ‘old’ findings still hold in ‘new’ teams? Are there ‘new’ processes or states? And, in turn, how do these relate to outcomes at different levels of analysis?

To conclude, the present dissertation is situated in the field of organizational behavior and stands on the shoulders of giants of team research (e.g., Hackman, 1987; Ilgen et al., 2005; Mayo, 1933). However, current megatrends have changed the way we work substantially. This calls into question much of what we know about teams and their functioning in organizations. Thus, I consider my dissertation as a small but important piece of the puzzle guiding us towards a greater understanding of the ‘new’ ecology of teams (Wageman et al., 2012).

1.4 Literature review on MTM

In one of the first contributions to this field of research, Mortensen et al. (2007) set a research agenda for studying the conditions and implications of MTM. Based on exploratory survey and interview data, they suggest that there are a number of challenges and benefits related to MTM at the individual, team, and organizational level. In subsequence, I review extant work on all three levels. Thereby, I successively address underlying theories, the dimensionality, antecedents, and consequences of MTM, as well as mediators and moderators. Table 1 summarizes what research has found out about MTM during the past ten years, following the structure proposed by Mortensen et al. (2007). Finally, I refer to related fields of research and delineate them from the topic of MTM.
1.4.1 Underlying theories

With regard to underlying theories, most MTM research builds on network-based (Chan, 2014; Mo & Wellman, 2016; O’Leary et al., 2011), knowledge-based (Bertolotti et al., 2015) or attention-based views (Bertolotti et al., 2015; Chan, 2014; Cummings & Haas, 2012; O’Leary et al., 2011). Whereas network and knowledge-based theories describe a positive view on MTM (i.e. increases performance), theories of attention entail a contrary perspective (i.e. reduces performance).

In their seminal paper, O’Leary et al. (2011) provide a fruitful basis for investigating MTM at the individual and team levels. Guided by attention and social network theories, they establish a model that describes how two dimensions, the number and variety of MTM, drive different mechanisms, yielding effects on learning and productivity. Specifically, they argue that the relationship between number of MTM and productivity at the individual and team levels is curvilinear (inverted U-shaped). On the one hand, according to social network theories, membership in multiple teams increases the access to various sources of knowledge, thus enhancing performance (e.g., Borgatti, Mehra, Brass, & Labianca, 2009). On the other hand, attention-based theories state that, at a certain threshold of team memberships, it becomes impossible to attend to and process the high load of information, thus decreasing performance (e.g., Ocasio, 1997).2 Similarly, Bertolotti et al. (2015) propose that the relationship between average number of team memberships and team performance is curvilinear. They build their argumentation on theories of knowledge acquisition and attention. Finally, Cummings and Haas (2012) also use an attention-based view in order to theoretically establish a negative linear relationship between average number of team memberships and team

2 Based on analogous argumentations, O’Leary et al. (2011) furthermore establish negative linear relationships between MTM variety and productivity, as well as between number of MTM and learning at the individual and team levels. Moreover, MTM variety is proposed to be positively related to learning at the individual and team levels, with learning increasing at a decreasing rate. However, in contrast to the relationship between number of MTM and productivity, these propositions have not been addressed by extant empirical research.
performance. As a common factor, all of this research points to the relevance of “different points of view, information and knowledge” (Bertolotti et al., 2015, p. 913) in MTM settings.

In addition to this stream of MTM theorizing, Maynard et al. (2012) refer to team effectiveness theory in order to bridge old findings of team research with new ideas aimed at understanding the complexity of multiteaming and virtual teams. Similarly, Pluut et al. (2014) apply a job demands-resources (JD-R) framework and analyze potential job demands and resources related to working in multiple teams. In a recent contribution, van de Brake et al. (2017) draw on a challenge and hindrance framework. Finally, a handful of studies on MTM engage in theory building rather than explicitly referring to existing theories (e.g., Engwall & Jerbrant, 2003; González & Mark, 2005; Mortensen, 2014).

1.4.2 Dimensionality

In contrast to multitasking (Jett & George, 2003), working in multiple teams does not only include task switching, but also a much “broader set of switches between team contexts” (O’Leary et al., 2011, p. 463). By definition, those team contexts include different tasks, roles, routines, technologies, locations, and so forth, which makes MTM more effortful and ultimately a multidimensional phenomenon (O’Leary et al., 2011).

In this vein, O’Leary et al. (2011) introduce number and variety as two separate dimensions, which together grasp the nature of MTM at the individual and team levels. On the one hand, number of MTM is defined as the (average) number of team memberships held by a single individual or the members of a team. It obviously represents the core dimension of the phenomenon and thus has also drawn most research attention (Bertolotti et al., 2015; Chan, 2014; Cummings & Haas, 2012; van de Brake et al., 2017). On the other hand, MTM variety refers to the “diversity (in tasks, technologies, locations, etc.) characterizing the teams that individuals are members of and that a focal team overlaps with” (O’Leary et al., 2011, p. 464). In contrast to number of MTM, it
has merely played a role in theoretical considerations by O’Leary et al. (2011) and was not explicitly addressed by successive research.

Another dimension that has received considerable research attention is the percentage of time spent on the focal team (Cummings & Haas, 2012; Maynard et al., 2012; Pluut et al., 2014). As Tannenbaum et al. (2012) state, it is possible that employees spend 70 percent of their time in one team, and only 10 percent in each of their other teams. Moreover, Cummings and Haas (2012) show that percentage of time spent on the focal team predicts team performance above and beyond the average number of team memberships. Therefore, Pluut et al. (2014) conclude that percentage of time spent on the focal team has to be distinguished from (average) number of MTM. In fact they even suggest using an index referred to as fragmentation of time, which is computed based on Simpson’s (1949) diversity formula and integrates both dimensions.

In another study, Mortensen (2014, p. 911) investigates the antecedents and effects of membership model divergence, a dimension of MTM which he defines as “the misalignment of team members’ models of who are – and who are not – team members [italics removed]”. Related to this, Lyubovnikova, West, Dawson, and Carter (2014, p. 930) investigate the consequences of “real team” versus “co-acting group” membership in a hospital setting. Thereby, real team membership is characterized by shared objectives, structural interdependence and team reflexivity. Finally, Mo and Wellman (2016) use network data of Canadian scholars in order to analyze how the multidisciplinary diversity of MTM affects the development of diverse ego networks. Applying a multilevel multimember modeling approach, the authors propose multidisciplinary diversity in MTM to positively impact the development of networks.

1.4.3 Antecedents and consequences

To the best of my knowledge, only a single study has addressed the antecedents of number of MTM so far. Using a sample of 2,055 employees from a multinational company, Cummings and Haas (2012) found that company
experience, organizational rank and educational attainment positively (negatively) influence the number of MTM (percentage of time spent on the focal team) at the individual level. Moreover, leader role was found to have a negative (positive) relation with number of MTM (percentage of time spent on the focal team).

In addition to this, Mortensen (2014) investigates antecedents of membership model divergence. Thereby, he discovered that number of MTM and geographic distribution of team members reduce the percentage of time dedicated to the focal team. This in turn is negatively related to membership model divergence. Moreover, mean level of interaction was found to have a negative relationship with membership model divergence. In contrast, variance in patterns of interaction was positively related to membership model divergence.

Concerning the consequences of multiteaming, the vast majority of empirical research concerns the relationship between (average) number of MTM and performance at the individual (Chan, 2014; Cummings & Haas, 2012; van de Brake et al., 2017) and team levels (Bertolotti et al., 2015; Chan, 2014; Cummings & Haas, 2012). Thereby, two studies are able to lend empirical support to a curvilinear link (inverted U-shaped) between number of MTM and individual (Chan, 2014) and team performance (Bertolotti et al., 2015). Furthermore, Cummings and Haas (2012) report a positive linear relationship between average number of MTM and team performance.

With regard to further dimensions, average percentage of time spent on the focal team was found to increase team performance (Cummings & Haas, 2012) and indirectly enhance team effectiveness (Maynard et al., 2012). Additionally, Mortensen’s (2014) study provides support to an indirect negative effect of membership model divergence on team performance. Last but not least, Pluut et al. (2014) empirically demonstrate that fragmentation of time across multiple teams indirectly increases job strain while reducing work engagement of employees.
1.4.4 Mediators and moderators

Finally, I turn to mediators and moderators. However, prior research has only made initial steps towards discovering the conditions and mechanisms of MTM functioning (Bertolotti et al., 2015). With regard to moderators, van de Brake et al. (2017) found that organizational tenure moderates the relationship between number of MTM and individual perceptions of multiteaming as a challenge or hindrance. Concerning the team level, external advice receiving, average instant messaging use and geographic dispersion were found to influence the relationship between average number of MTM and team performance (Bertolotti et al., 2015; Cummings & Haas, 2012). Besides, geographic dispersion also moderates the relationship between average percentage of time spent on focal team and team performance (Cummings & Haas, 2012).

With regard to mediators, two studies report serial mediation effects: on the one hand, Maynard et al. (2012) found that percentage of time spent on the focal team is positively related to preparation activities, which in turn increases transactive memory and ultimately team effectiveness. The relationship between percentage of time spent on the focal team and preparation activities, however, was dependent on the interdependence of team members. On the other hand, Mortensen’s (2014) study empirically supports a serial mediation leading from number of MTM to percentage of time spent on the focal team (-), to membership model divergence (-), to transactive memory (-), to team performance (+). Beyond serial mediation studies, Pluut et al. (2014) found that the relationship between fragmentation of time across teams and employee job strain was mediated by team process load and conflict with team members. Furthermore, their study revealed that team social support mediated the relationship between fragmentation of time and work engagement. Finally, work by van de Brake et al. (2017) demonstrates that challenge / hindrance appraisal mediates the indirect effect of number of MTM on job performance and absenteeism.
Table 1. Literature review on MTM

<table>
<thead>
<tr>
<th>Source</th>
<th>Type of contribution</th>
<th>Underlying theories</th>
<th>Dimension(s)</th>
<th>Antecedents and consequences</th>
<th>Mediators and moderators</th>
<th>Main findings concerning MTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chan (2014)</td>
<td>Quantitative study</td>
<td>Social network and attention theories</td>
<td>Number of MTM</td>
<td><strong>Consequences:</strong> individual innovative performance</td>
<td></td>
<td>The relationship between number of MTM and innovative performance was found to be curvilinear (inverted U-shape).</td>
</tr>
<tr>
<td>Cummings and Haas (2012)</td>
<td>Quantitative study</td>
<td>Attention-based theory</td>
<td>Number of MTM; percentage of time spent in focal team</td>
<td><strong>Antecedents:</strong> company experience, organizational rank, educational attainment, leader role</td>
<td></td>
<td>Company experience, organizational rank and educational attainment increased (decreased) the number of MTM (percentage of time spent). Leader role decreased (increased) the number of MTM (percentage of time spent).</td>
</tr>
<tr>
<td>Engwall and Jerbrant (2003)</td>
<td>Qualitative study</td>
<td>Theory-building</td>
<td>-</td>
<td></td>
<td></td>
<td>Based on two case studies (multi-project settings), the authors discuss the resource allocation syndrome. Thereby, they describe the conflict between project resource demands and scarcity of (human) resources.</td>
</tr>
<tr>
<td>González and Mark (2005)</td>
<td>Qualitative study</td>
<td>Theory-building</td>
<td>-</td>
<td></td>
<td></td>
<td>In an ethnographic study of two companies, the authors observed context switching challenges related to MTM. Moreover, they identify several supporting factors.</td>
</tr>
<tr>
<td>Study Authors</td>
<td>Methodology</td>
<td>Theoretical Framework</td>
<td>Variables</td>
<td>Consequences</td>
<td>Antecedents</td>
<td>Consequences Description</td>
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<tr>
<td>-----------------------------</td>
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<tr>
<td>Lyubovnikova et al. (2014)</td>
<td>Quantitative study</td>
<td>Social identity theory</td>
<td>Real team membership; co-acting group membership</td>
<td>Consequences: Error rate, injuries, experience of violence or harassment, turnover intentions</td>
<td>-</td>
<td>Real-team membership was found to have a positive impact on a number of individual outcomes in a hospital setting.</td>
</tr>
<tr>
<td>Mo and Wellman (2016)</td>
<td>Methods and quantitative study</td>
<td>Network theories</td>
<td>Multidisciplinary diversity in MTM</td>
<td>Antecedents: age, g-index citation index, seniority, role in network, diversity regarding discipline and affiliation with projects</td>
<td>-</td>
<td>Diversity in teams had a positive effect on the development of diverse ego networks (rather online than offline).</td>
</tr>
<tr>
<td>O'Leary et al. (2011)</td>
<td>Theoretical study</td>
<td>Social network and attention theories</td>
<td>Number of MTM; variety of MTM</td>
<td>Consequences: individual productivity, individual learning</td>
<td>-</td>
<td>The authors develop a set of research propositions: (1) The relationship between number of MTM and individual productivity is curvilinear (inverted U-shape). (2) The relationship between number of MTM and individual learning is linear and negative. (3) The relationship between MTM variety and individual productivity is linear and negative. (4) The relationship between MTM variety and individual learning is positive with diminishing returns.</td>
</tr>
<tr>
<td>Pluut et al. (2014)</td>
<td>Quantitative study</td>
<td>Job demands-resources framework</td>
<td>Fragmentation of time across teams</td>
<td>Consequences: job strain, work engagement</td>
<td>Mediators: task load, team process load, conflict with team members, team social support, job autonomy</td>
<td>Fragmentation of time increased job strain via job demands. Moreover, fragmentation of time indirectly decreased work engagement via reduced team social support.</td>
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<tr>
<td>Van de Brake et al. (2017)</td>
<td>Quantitative study</td>
<td>Challenge and hindrance framework</td>
<td>Number of MTM</td>
<td>Consequences: job performance, absenteeism</td>
<td>Mediators: challenge and hindrance appraisal</td>
<td>Moderators: organizational tenure</td>
</tr>
<tr>
<td>Bertolotti et al. (2015)</td>
<td>Quantitative study</td>
<td>Knowledge acquisition and attention theories</td>
<td>Average number of MTM</td>
<td>Consequences: team performance</td>
<td>Moderators: external advice receiving, average instant messaging use</td>
<td>The relationship between average number of MTM and team performance was found to be curvilinear (inverted U-shape). This relationship was moderated by external advice receiving and the use of instant messaging.</td>
</tr>
</tbody>
</table>
Table 1. Literature review on MTM (continued)

<table>
<thead>
<tr>
<th>Cummings and Haas (2012)</th>
<th>Quantitative study</th>
<th>Attention-based theory</th>
<th>Average number of MTM; average percentage of time spent on focal team</th>
<th>Consequences: team performance</th>
<th>Moderators: geographic dispersion</th>
<th>Average number of MTM and percentage of time spent on team were found to have a linear positive relationship with team performance. Both relationships were found to be moderated by geographic dispersion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maynard et al. (2012)</td>
<td>Quantitative study</td>
<td>Team effectiveness theory</td>
<td>Average percentage of time spent on focal team</td>
<td>Consequences: team effectiveness</td>
<td>Mediators: preparation activities, transactive memory systems</td>
<td>The positive relationship between percentage of time spent and preparation activities was found to be moderated by interdependence. Preparation activities, in turn, related significantly to effectiveness as mediated by transactive memory systems.</td>
</tr>
<tr>
<td>Mortensen (2014)</td>
<td>Theoretical and quantitative study</td>
<td>Theory-building</td>
<td>Membership model divergence</td>
<td>Antecedents: MTM, geographic dispersion, team size, percentage of time spent on focal team, mean interaction, variance in interaction</td>
<td>Mediators: transactive memory</td>
<td>Mortensen investigated and provides evidence for a chain of relationships, leading from MTM to percentage of time spent on focal team (-), to membership model divergence (-), to transactive memory (-), to team performance (+).</td>
</tr>
</tbody>
</table>
Table 1. Literature review on MTM (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Theoretical study</th>
<th>Social network and attention theories</th>
<th>Average number of MTM; average variety of MTM</th>
<th>Consequences: team productivity, team learning</th>
<th>Consequences: patient mortality, sickness absence</th>
</tr>
</thead>
<tbody>
<tr>
<td>O’Leary et al. (2011)</td>
<td>Theoretical study</td>
<td>Social network and attention theories</td>
<td>Average number of MTM; average variety of MTM</td>
<td>Consequences: team productivity, team learning</td>
<td>-</td>
</tr>
<tr>
<td>Lyubovnikova et al. (2014)</td>
<td>Quantitative study</td>
<td>Social identity theory</td>
<td>Real team membership; co-acting group membership</td>
<td>Consequences: patient mortality, sickness absence</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. MTM = multiple team membership

The authors develop a set of research propositions: (1) The relationship between average number of MTM and team productivity is curvilinear (inverted U-shape). (2) The relationship between average number of MTM and team learning is linear and negative. (3) The relationship between average MTM variety and team productivity is linear and negative. (4) The relationship between average MTM variety and team learning is positive with diminishing returns.

Higher average levels of real team membership were found to decrease patient mortality and sickness absence.
1.4.5 Related fields of research

As noted by prior work (e.g., O’Leary et al., 2011; O’Leary, Woolley, & Mortensen, 2012), particularly three fields of research are closely related to the topic of MTM: multitasking, multiteam systems (MTS), and project management. First, research on multitasking deals with the micro processes of task switching (Leroy, 2009) or time swapping and sharing (Reinsch, Turner, & Tinsley, 2008) and thus has implications for how we study MTM (O’Leary et al., 2011). Yet, these implications are limited due to multitasking research’s exclusive focus on the individual level and on human cognition. Moreover, it refers to relatively small periods of time, which are generally less than a minute (Altmann & Gray, 2008). In consequence, this research will not prove helpful in understanding the consequences of MTM at the team and organizational levels. Furthermore, it is not capable of grasping the much broader consequences of team context switching, which also includes different co-workers, roles, tasks, routines, technologies, and so forth (O’Leary et al., 2011).

![Figure 3. Relationship between a MTS and MTM](image)

**Note.** MTS = multiteam system. MTM = multiple team membership.

**Source:** (O’Leary et al., 2012, p. 142)
Second, it is important to distinguish between MTM and MTS, which constitute “subsets of component teams acting interdependently to accomplish at least one proximal goal, with all acting in concert toward a superordinate distant goal” (O’Leary et al., 2012, p. 141). For a detailed elaboration on the differences of MTM and MTS, I advise the reader to refer to O’Leary et al. (2012). Nevertheless, I briefly want to explain the main differences between both constructs. Whereas MTSs may include interdependence in terms of information, technology, material, financial resources, human resources, and so forth, MTM is restricted to human resources (or membership) interdependence. As displayed in Figure 3, it is therefore possible that a team setting is referred to as either MTM or MTS, as a combination of both, or as neither of both.

In contrast to the other two fields of research, I believe that work on project management has wide-ranging consequences for studying MTM. However, as Allen and O’Neill (2015, p. 309) state, there is an “apparent gap between the organizational psychology and the project management approaches” to understanding team composition. It would go beyond the scope of this dissertation to discuss this gap and ways in which it “might fruitfully be bridged” (p. 309) in further detail. Moreover, an anthology on this issue has been published recently (Chiocchio, Kelloway, & Hobbs, 2015). Nevertheless, my work is also guided by extant literature of project team research (e.g., Chiocchio et al., 2015; Engwall & Jerbrant, 2003; Söderlund, 2002; Zika-Viktorsson et al., 2006) and I hope that this represents a small step towards further integrating both streams of literature.

Based on this comprehensive review of extant MTM research, I now turn to research gaps and intended contributions of the present dissertation.

1.5 Research gaps and intended contributions

What are the implications of organizational multiteaming for both, individual employees and entire organizations? What can organizations do to seize the positive, while avoiding the negative consequences of MTM structure? In order
to provide a detailed exploration of these questions, I suggest breaking them down into smaller pieces. More precisely, my dissertation is divided into three studies, each of them addressing a selection of concise research questions. Altogether, the three studies help to shed light on the overarching questions raised above and thus make substantial contributions to the field of MTM research. Subsequently, three research gaps as well as the respective contributions are identified and described.

1.5.1 Contribution 1 – from human resources to human beings

First, prior multiteaming research at the individual level was almost exclusively concerned with the performance consequences of working in multiple teams (e.g., Chan, 2014; Cummings & Haas, 2012; O’Leary et al., 2011). Meanwhile, the individual-level side effects of MTM have not received deepened scientific attention\(^3\) – especially with regard to a distinction between positive and negative consequences for employees. Similarly, van de Brake et al. (2017) note that the detection of positive team-level effects is not sufficient to refer to multiteaming as entirely beneficial for individual employees. In the first study of this dissertation, I thus adopt a role-theoretical perspective and develop an alternative framework for studying MTM, which aims at balancing team composition and individual needs (Mathieu et al., 2008). Thereby, I move beyond simple “multitasking is bad” (O’Leary et al., 2011, p. 462) arguments and discuss negative (i.e., role strain) as well as positive consequences (i.e., role identity integration) related to multiteaming (Callero, 1994; Caza & Wilson, 2009; Goode, 1960). Furthermore, I discuss the role of individual polychronic orientation (IPO) as an important boundary condition and personal asset for successful multiteamers (i.e., individual performance, satisfaction, and well-being).

\(^3\) A study by Pluut et al. (2014) investigates the effects of MTM on job strain and work engagement and thus represents a single exception to this statement.
1.5.2 Contribution 2 – firm-level mechanisms of MTM structure

Second, firm-level research on MTM is (almost) non-existent (cf. Table 1). Although a handful of studies point to the relevance of investigating firm-level conditions and consequences of MTM (e.g., Bertolotti et al., 2015; Mortensen et al., 2007), to the best of my knowledge, neither conceptual nor empirical work have been published in this direction. Within this dissertation, I take research on MTM to a new level, namely the organization. In the second study, I develop a social capital-based framework for firm-level MTM research, and thereby conceptually link MTM structure to intra-organizational connectivity (O’Leary et al., 2008) and firm performance. Moreover, I define and provide evidence for two firm-level dimensions of MTM: MTM level, defined as a unit-level construct that provides information on the intensity of an organization’s use of multiteaming, and MTM heterogeneity, defined as the deviation in the number of team memberships held by the individuals within an organization. In the third study, I adopt a social system perspective (Katz & Kahn, 1978) and elaborate on the organizational leadership, climate (i.e., organizational energy) and performance consequences of firm-level multiteaming. Together, studies 2 and 3 are designed to shed light on the competitive advantage that organizations (potentially) gain by implementing MTM structures.

1.5.3 Contribution 3 – a multidimensional and interrelated phenomenon

Third, extant research demonstrates the complexity and multidimensional nature of MTM (e.g., Maynard et al., 2012; Mo & Wellman, 2016; O’Leary et al., 2011; Pluut et al., 2014). I argue that the list of dimensions, which need to be considered when studying MTM, is by far not exhaustive. Moreover, prior work has considered the various facets of MTM as rather unrelated phenomena, instead of investigating the interrelations of single dimensions. In the present dissertation, I address different facets of multiteaming and even define and provide evidence for new dimensions of MTM, such as MTM level and heterogeneity at the firm level. As a further contribution to prior research, I consider the respective dimensions of MTM as interrelated: in the first study, I
calculate an index termed fragmentation of time (Pluut et al., 2014) and investigate the joint consequences of number of MTM and percentage of time spent on the respective teams for individual employees. In the second study, I propose and provide evidence that the effects of MTM level on organizational social capital are contingent on the levels of MTM heterogeneity within firms. In combination, the three studies contain answers to the overarching questions raised above. Furthermore, I believe that my work has wide-ranging implications for how we study and practically use MTM structures in organizations.

### 1.6 Methodological approach

#### 1.6.1 Research paradigm

“The scientist or the artist takes two facets or experiences which are separate; he finds in them a likeness which had not been seen before; and he creates a unity by showing the likeness” (Bronowski, 1956, p. 31). In line with Karl Popper (1959), Thomas Kuhn (1970), and Charles Hanson (1958), work by Jacob Bronowski (1950, 1956) is considered as one of the main influences in promoting post-positivist research philosophy. The present dissertation strongly draws on the ideas of internal realism (ontology) and post-positivism (epistemology; cf. Easterby-Smith, Thorpe, & Jackson, 2012). Therefore, the above quote by Jacob Bronowski (1956) reflects many of the assumptions that I made when choosing the methods, collecting the data and ultimately writing the dissertation at hand.

According to Easterby-Smith et al. (2012), many management scholars do not explicitly state their philosophic approach towards research or simply adopt the major paradigm in their field. This is unfortunate, because “[a]wareness of philosophical assumptions can both increase the quality of research and contribute to the creativity of the researcher” (Easterby-Smith et al., 2012, pp. 17–18). Hence, I decided to discuss my assumptions about reality in organizations (i.e., ontology) and the enquiry into such realities (i.e.,
epistemology) in closer detail. Thereby, I do not explain and compare the plethora of research paradigms that exist in management research. This has been done in extant work in a comprehensive and holistic fashion (e.g., Easterby-Smith et al., 2012; Saunders, Lewis, & Thornhill, 2016). Instead, I focus on the assumptions and aims of post-positivism which also represent the foundation of my work. Furthermore, I discuss the implications of my ontological and epistemological assumptions for the choice of research methods in this dissertation. That being said, I want to emphasize that my attitude towards conducting research can by no means be classified as unificationistic (Knudsen, 2003). Rather, I appreciate the enriching diversity of multiple research philosophies, paradigms, and methodologies – also referred to as pluralism (Knudsen, 2003).

Concerning ontology (Saunders et al., 2016), I adopt a rather realistic attitude, which is best classified as internal realism (Easterby-Smith et al., 2012). Internal realism assumes that “there is a single reality, but asserts that it is never possible for scientists to access that reality directly” (Easterby-Smith et al., 2012, p. 19). Rather, research should try to gather indirect evidence of what is going on in fundamental physical processes (Putnam, 1987).

In line with internal realism, my epistemological approach towards conducting this dissertation is rooted in post-positivism (e.g., Bronowski, 1950; Popper, 1959). Post-positivism accepts many of the ideas of positivism (cf. Table 2) but also advocates alternative viewpoints concerning core assumptions of positivistic philosophy. In particular, post-positivism acknowledges the existence of unobservables and the capability of research to explain the functioning of observable phenomena (Bronowski, 1956). In consequence, theoretical reasoning and theory building play a crucial role in post-positivism. Moreover, human interests are not considered as irrelevant in post-positivist research, but are referred to as important exploratory mechanisms (Bronowski, 1956). In this vein, post-positivism does not exclusively focus on large quantitative data (although it places a strong focus on such methods), but also includes qualitative, non-numerical data (e.g., Eisenhardt, 1989).
Table 2. Contrasting implications of positivism and social constructionism

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<th>Positivism</th>
<th>Social Constructionism</th>
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<td>The observer</td>
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<td>observed</td>
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<td>Human interests</td>
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<td>Explanations</td>
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<td>Research progresses</td>
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<td>through</td>
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<td>Units of analysis</td>
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<td>simplest terms</td>
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<td>Generalization through</td>
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<td>Sampling requires</td>
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<td>... small numbers of cases</td>
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<td></td>
<td>randomly</td>
<td>selected for specific reasons</td>
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Source: adopted from Easterby-Smith et al. (2012, p. 24)

The methodological proceedings in the three studies presented in chapters 2, 3, and 4 are guided by the assumptions of internal realism and post-positivism in multiple ways. First, the concepts and constructs that I refer to are *precisely defined* and delineated from related concepts. Second, I engage in extensive theoretical reasoning, in order to build strong *causal* arguments and develop respective *hypotheses*. At the same time, the three studies are also *theory building* as they advance and recombine existing theoretical arguments. Third, in all three studies, I explicitly and concisely address a *single level of analysis* (i.e., individual level or organizational level). Fourth, I apply *large quantitative datasets* in order to test the developed hypotheses. That being said, I also gathered *qualitative data* by conducting several interviews. Although the
interview data was not used for hypotheses testing, I acknowledge that many ideas and theoretical arguments throughout this dissertation originated from the experiences of multiteamers in organizational practice (i.e., interview partners). For example, I use noteworthy statements of my interview partners as introductory hooks in studies 1 and 3. Finally, random sampling (e.g., bootstrapping procedures) and assessing statistical probability via statistical inference (e.g., confidence intervals) play an important role in the generalization of the empirical findings in this dissertation.

1.6.2 Study design and data collection

In line with the research paradigm, all three studies are based on quantitative methods. This means, data was gathered electronically via questionnaires and stored in data bases. Most statistical analyses were carried out using the statistics program SPSS. Study 1 addresses the individual level and uses longitudinal data with a three months lag between the two points of measurement. Contrarily, the research questions of studies 2 and 3 aim at examining firm-level dimensions of MTM and thus rely on aggregation of data. Moreover, the latter two studies are cross-sectional with measurement at one point in time. Following recommendations of data validity, consistency, and reliability, I conducted distribution analyses (Hays, 1994), scale reliability measures (Cronbach, 1951), statistical tests and analyses for justifying the aggregation of individual-level data to the organizational level (Bliese, 2000).

Data for study 1 was collected via the online respondent pool SoSci Panel\(^4\) between February and June 2017. The SoSci Panel represents a non-commercial project that was founded in 2009 and aims at supporting academic research by providing access to high-quality convenience samples. The panel comprised more than 63’000 panelists by 2016 (Leiner, 2016) and more than 87’000 panelists by 2017. The majority of the panel population is currently employed (45 percent), highly educated (82 percent qualified for university entrance) and

\(^4\) For more information, please visit [www.soscisurvey.de/panel](http://www.soscisurvey.de/panel).
living in Germany (85 percent). Due to the panel’s accurate data regarding its population, it is possible to place requirements on the invited study participants (e.g., employment status, level of education, etc.). In this sense, the SoSci Panel is better referred to as a convenience pool rather than a single convenience sample. Moreover, the panel allows for multiple survey waves, high sample sizes, fast response speed, and high levels of sample heterogeneity (for a detailed description of the panel, see Leiner, 2016).

In cooperation with an agency located in Germany, the data for studies 2 and 3 was collected during the years 2015 and 2016. The agency is specialized in conducting benchmarking studies of small to medium sized firms. The two criteria for the participation of companies within this benchmarking study were that the company is located in Germany and that it does not exceed 5’000 employees. The participating organizations belonged to a variety of industries such as manufacturing, services, finance and insurance, retail and wholesale. Data was gathered with an online survey filled out by several rater groups. This means, not only the employees but also HR representatives and members of the top-management team (TMT) received a survey. Moreover, within the employee surveys, a split-sample design was applied directing the participants to one of three (study 3) or four (study 2) versions of the questionnaire via a programmed algorithm. This strategy aimed at reducing same source bias (Rousseau, 1985).

A more detailed description of the methodological procedures will be presented in the single studies.

1.6.3 Measurement of MTM

As mentioned before, MTM represents a multidimensional phenomenon with varying implications at the different levels of analysis (e.g., Mortensen et al., 2007). In this vein, the three studies presented below include different facets and conceptualizations of multiteaming. Study 1 refers to the fragmentation of time index, which is calculated on the basis of the number of MTM and the
percentage of time spent in the respective teams (Pluut et al., 2014). Meanwhile, studies 2 and 3 address the firm-level and thus look at different dimensions of multiteaming (i.e., MTM level and heterogeneity). As a common factor, all three studies require the measurement of the (average) number of team memberships that the participants held during a specific timeframe. In order to ensure comparability between the studies, raw data concerning the number of MTM was collected uniformly throughout this dissertation.

In line with prior research (Bertolotti et al., 2015; Cummings & Haas, 2012; Mortensen, 2014; O’Leary et al., 2011), I asked the participants of the three studies to indicate their average number of team memberships during a certain timeframe. Although it may be possible to gather information on team memberships via organizational records, a self-reported measure has many advantages (Chiocchio et al., 2010): first, organizational information on team assignments may not be adequate, up-to-date, or comparable between different firms. Second, relying on self-reported data is a cost-effective and standardized procedure. Finally, research by Alwin (2007) demonstrates that self-reported data of facts is accurate. With regard to studies 2 and 3, aggregation (i.e., mean or SD) of the number of MTM was required. Klein and Kozlowski (2000) refer to this kind of operationalization as a configurational unit property, which is the result of compilation processes (see also Bertolotti et al., 2015). Compilation processes „rest on the assumption that there are apparent differences between aggregated and non-aggregated data. Therefore, it is not necessary that individual or lower-level data demonstrate consensus prior to aggregation” (LeBreton & Senter, 2008, p. 817). Calculation of ICCs and AD_{M/j} was thus not required for this conceptualization.
1.7 Outline of the dissertation

1.7.1 Integrative perspective

In sum, my dissertation addresses the consequences and interplay of various dimensions of MTM at the individual and firm levels. Thereby, I analyze the role-based effects of MTM at the individual level as well as firm-level consequences for organizational social capital, productive organizational energy (POE) and firm performance. Furthermore, I examine factors influencing these relationships, such as IPO (study 1), the design of MTM structures (i.e., MTM heterogeneity; study 2), and organizational leadership (study 3).

Figure 4 comprehensively integrates the core ideas of the three studies and can thus be considered as an overarching framework of this dissertation.

1.7.2 Abstracts of the three studies

In study 1, I investigate how fragmentation of time across multiple teams influences the perception of role conflict at different levels of IPO (Bluedorn, Kaufman, & Lane, 1992). Rooted in multiple perspectives of role theory (i.e., role strain, role accumulation, and role transition), I propose two mechanisms leading from fragmentation of time to perception of role conflict (i.e., inter-role conflict and person-role conflict). Building on this, I argue that monochronics perceive increased levels of role conflict in multiteaming situations. Meanwhile, their polychronic counterparts are predicted to even report reduced perceptions of role conflict at an increasing fragmentation of time across multiple teams. Finally, I also examine conditional indirect effects on distal outcomes, such as job performance, job satisfaction, and well-being. The proposed model is tested in a sample of 341 German employees. Multiple regression and bootstrapping analyses strongly support the hypothesized relationships. I believe that this study holds intriguing implications for research on MTM, role theory, and polychronicity.
**Figure 4. Integrative research perspective**

*Note.* MTM = multiple team membership. POE = productive organizational energy.
In study 2, I take research on the dimensionality and consequences of MTM to a new level, namely the organization. I introduce and define two firm-level dimensions of MTM, level and heterogeneity: whereas MTM level is defined as the median number of MTM per organization, MTM heterogeneity refers to the deviation in the number of MTM across employees. Following social capital theory, I argue that MTM level increases firm performance via organizational social capital. This relationship, however, is contingent on the levels of MTM heterogeneity within an organization. That is, at high levels of MTM heterogeneity, the initially positive effect is predicted to turn insignificant. I utilize multiple regression and bootstrapping analyses to test the hypotheses on the basis of a multisource dataset comprising 85 companies. The results strongly support my conceptual model. Particularly, they highlight the relevance of MTM heterogeneity for a successful application of MTM structures. First and foremost, this study contributes to the field of MTM research. Moreover, it holds intriguing implications for organizational diversity.

In study 3, I build on the finding that multiteaming is not limited to single departments or highly innovative industries anymore, but is starting to spread across entire organizations from all kinds of industries (Barley et al., 2017). I refer to these as multiteam organizations (MTOs). Drawing on a social system perspective (Katz & Kahn, 1978), I focus on the relationships between the multiple teams in such organizations (i.e., motivational capacities and coordination challenges) and investigate how MTM structure affects the climate and performance of MTOs. Moreover, I examine the role of organizational leadership (i.e., hierarchical and shared organizational leadership) in fostering a productive and dynamic climate. I apply multiple regression and bootstrapping analyses in a sample of 82 German firms, in order to empirically test the conceptual model. The results provide strong support to my theoretical reasoning: only if both, hierarchical and shared leadership are strongly pronounced, an increasing level of organizational multiteaming yields beneficial effects on an organization’s climate and performance.
2 Study 1 – Multiple teams, multiple roles, multiple consequences: are polychronics the better multiteamers?5

2.1 Introduction

Employee A: “I believe that we [the employees] should not work in multiple teams, as this is confusing and creates conflict in attention. […] I actively try to avoid working in multiple teams at the same time.”

Employee B: “I have never thought about my team assignments as being exhausting. In fact, I find it stimulating and interesting to work in several teams. It is more action.”

The two quotes are taken from interviews which I conducted in an R&D unit of a large German car manufacturer. Both, employee A and employee B work in the same department, hold the same job title, and share the same tasks, colleagues, location, routines, organizational structure and climate. Ceteris paribus, employee B still appears to be much more inclined towards working in multiple teams – but why? According to literature on person-job fit (e.g., Edwards, 1991; Kristof-Brown, Zimmerman, & Johnson, 2005), the congruence between the employees’ needs, desires, or preferences and the respective supplies by the job affects their satisfaction, well-being, and performance at work. Similarly, Mortensen et al. (2007, p. 221) argue that “[c]hoosing the right people to work in an MTM environment is critical”. Drawing on this, I propose that some employees have an inherent preference for MTM, whereas others do not. As a result, some employees are more likely to strive in MTM settings, whereas others are overburdened by the conflicting demands and frequent switches between multiple team contexts.

In contemporary organizations, MTM is the norm rather than the exception: according to U.S. and European surveys, 65 to 95 percent of knowledge workers are members of more than one team at a time, and in some companies it is even common to simultaneously work in ten or more teams (O’Leary et al., 2011; Zika-

5 An earlier version of this study has been accepted at the 78th AOM Annual Meeting 2018.
Viktorsson et al., 2006). Therefore, it is not surprising that research has started to show a growing interest in the phenomenon of MTM. Building on seminal work by O’Leary et al. (2011), the majority of extant research was dedicated towards uncovering the relationship between multiteaming and performance (Bertolotti et al., 2015; Chan, 2014; Cummings & Haas, 2012; Maynard et al., 2012). However, far less attention has been paid to contextual factors influencing this relationship. This is unfortunate as contextual factors ultimately represent the key organizational levers for designing effective MTM structures. In two team-level studies, Bertolotti et al. (2015) and Cummings and Haas (2012) identify advice receiving, average instant messaging use and geographic dispersion as relevant boundary conditions. Yet, the team and organizational setting are only one half of the story. In this vein, several scholars hint at the importance of the employees’ personal disposition for working in multiple teams (Bertolotti et al., 2015; Mortensen et al., 2007; O’Leary et al., 2011). Or in other words: what’s the use of the best recipe, if you lack the right ingredients? Following Bertolotti et al. (2015), I propose that an individual’s polychronic orientation (Bluedorn et al., 1992) is a crucial character trait for being a successful ‘multiteam worker’. As noted by O’Leary et al. (2011), working in multiple teams does not simply mean working on multiple tasks. Rather, MTM includes much broader switches between different working spheres (González & Mark, 2005), each of them associated with specific roles and role identities (Katz & Kahn, 1978; O’Leary et al., 2011). On the one hand, managing multiple roles (Rizzo, House, & Lirtzman, 1970) and particularly switching between different roles (Ashforth, Kreiner, & Fugate, 2000) has been described as effortful for employees, eventually resulting in role conflict. On the other hand, however, there is also evidence that multiple roles can be accumulated and integrated, resulting in superior sense-making and reduced role conflict (e.g., Callero, 1994; Sieber, 1974). I argue that MTM has the potential to trigger both, increased role strain (Goode, 1960) as well as role integration (Caza & Wilson, 2009). Furthermore, I hold that the salience of the two opposing effects is dependent on contextual factors. In the present study, I investigate the concept
of individual polychronic orientation (IPO) as buffering and reinforcing condition of the proposed mechanisms: a high polychronic orientation may help to deal with the stressful and conflicting demands of multiple working spheres. Moreover, it may also facilitate the juggling and integration of multiple role identities.

My research is guided by the following two questions: (1) does MTM increase or decrease role conflict? (2) How are the role-based consequences of MTM affected by the employees’ polychronic orientation? In order to address these questions, I briefly review extant literature on multiteaming and elaborate on the main theoretical concepts underlying my study. Building on this, I propose a moderated mediation model, which captures my role-theoretical arguments and relates those to individual outcomes, such as job performance, satisfaction and employee well-being. I empirically test the hypothesized relationships using a longitudinal sample of 355 German employees. Finally, I discuss my findings as well as potential implications and limitations of my research.

With this study, I want to make three main contributions to research on MTM. First, I want to attach a stronger ‘human touch’ to the study of MTM. In that sense, I shift the perspective from ‘what individuals give to multiple teams’ to ‘what multiteaming gives to individuals’. Thereby, I conceptualize employees not as human resources, but as human beings who – dependent on their individual disposition (i.e. polychronically versus monochronically-oriented) – can benefit or suffer from working in multiple teams. In this regard, my study is also the first to address the question of what it takes to be a successful ‘multiteam worker’. Second, I take up arguments that multiteaming does not merely represent a situation of multitasking, but inevitably includes switching between multiple roles and working spheres (cf. O’Leary et al., 2011). Drawing on role theory, I elaborate on a mechanism leading from MTM to perception of role conflict, and ultimately to a set of individually as well as organizationally relevant outcomes. In essence, I propose two opposing modes of action resulting in either reduced (role identity theory; Caza & Wilson, 2009) or enhanced (role strain theory; Goode, 1960) perceptions of role conflict. Finally,
Beyond theoretical contributions, my study empirically underlines that MTM is neither ‘good’ nor ‘bad’. O’Leary et al. (2011, p. 472) argue that a “purely negative view of [MTM] is shortsighted”. I claim that the same is true for a purely positive view. In this regard, I provide evidence that the individual consequences of working in multiple teams vary significantly between employees. This has intriguing implications for organizational recruiting and training, as well as for the team allocation process.

In line with this year’s theme of the Academy of Management conference, I advocate that decisions on team allocation should not solely be guided by a “managerial focus on utilization and flexible resource deployment” (O’Leary et al., 2011, p. 472), but equally by aspirations of improving the employees’ lives. Depending on individual preferences and predispositions, MTM structures entail substantial chances for personal growth, but also risks of increased strain and conflict. With this study, I show that integrating individual character traits, such as IPO, into multiteaming allocation decisions is a worthwhile endeavor – for employees, but also for teams and entire organizations.

2.2 Theory

Although research is starting to catch up with the extensive use of MTM in organizational practice, we are still left with a fragmented and, to some extent, even one-sided perspective on the phenomenon. Organizations primarily adopt MTM structures in order to benefit from a flexible use of human resources and to foster the exchange and integration of knowledge within and between teams (O’Leary et al., 2011). Following this, the majority of extant research has focused on the team-level benefits of MTM structures, such as increasing team performance and effectiveness (Bertolotti et al., 2015; Chan, 2014; Cummings & Haas, 2012; O’Leary et al., 2011). Although this research has enlightened our understanding of MTM to a great extent, it would be premature and even dangerous to refer to MTM as an outright beneficial HRM practice (van de Brake et al., 2017). Rather, we are well-advised to first consider potential side effects
and account for cognitive as well as affective challenges that occur to employees who are members of multiple teams. So far, solely two studies have addressed the individual-level consequences of working in MTM structures. Both of them support O’Leary et al.’s (2011) notion of MTM as a ‘double-edged sword’: Pluut et al. (2014) build on a job-demands resources framework and propose that fragmentation of time across teams is positively related job demands, but also increases job resources. Although the proposed relationship between MTM and job resources was not supported in their study, they make strong theoretical arguments for the ‘two-foldedness’ of individual multiteaming. Moreover, a study by van de Brake et al. (2017) shows that the perception of MTM as a challenge or hindrance is dependent on the employees’ organizational tenure. Specifically, employees with low tenure are more likely to perceive MTM as a hindrance rather than a challenge.

Organizational research is rarely absolute. The twofold nature of the findings of prior research suggests that this is also the case for the individual-level consequences of working in multiple teams. To address this, I consider potential positive (i.e., role integration) as well as negative (i.e., role strain) consequences associated with holding multiple roles in MTM contexts. Moreover, I introduce the concept of IPO as a crucial prerequisite for successful multiteam workers.

Before I turn to the hypotheses of my model, I want to engage in a discussion of the main concepts of the study. Thereby, I first describe what it means to hold multiple roles in multiple teams. Specifically, I address the notion of time fragmentation (Pluut et al., 2014) as well as the role-switching processes in MTM settings in greater detail. Second, I elaborate on a common understanding of IPO and explain its relevance in multiteaming situations.

2.2.1 Multiple teams, multiple roles and the role transition process

*Fragmentation of time across multiple teams.* I define *teams* as bounded sets of individuals who work interdependently toward a shared outcome (Hackman, 1987). Individuals are *members* of one or, in the case of MTM, more teams when
they share the responsibility and reward for the outcomes of the team and recognize each other as members (O’Leary et al., 2011). Hence, I conceptualize MTM as a situation in which individuals are concurrently members of two or more teams (O’Leary et al., 2011) and working time is fragmented across multiple teams (Pluut et al., 2014). Prior research has demonstrated that MTM is a multidimensional phenomenon. In this vein, the number (Bertolotti et al., 2015; Cummings & Haas, 2012; O’Leary et al., 2011) and variety of MTM (O’Leary et al., 2011), the percentage of time spent on a focal team (Cummings & Haas, 2012; Maynard et al., 2012), and fragmentation of time across multiple teams (Pluut et al., 2014) have been introduced as separate facets of multiteaming.

In the present paper, I particularly focus on the fragmentation of time across teams. This concept integrates two of the above-mentioned dimensions, as it accounts for the number of MTM, but also includes the percentage of time spent on the respective teams (cf. Pluut et al., 2014). I chose this dimension for two reasons: on the one hand, it effectively grasps the “role switching challenges and opportunities associated with MTM” (Pluut et al., 2014, p. 339), which also represent the core of my theoretical model. On the other hand, it provides more detailed information on the relative importance of the respective team memberships. As Pluut et al. (2014, p. 339) note, there is a strong difference between an individual who “spends 50% of his or her time in one team and 50% in another team” and an individual who “spends 90% of his or her time in one team and 10% in another team”. Although both individuals are assigned to two teams in absolute numbers, a 50/50 allocation will result in a much higher number of switches between team contexts (and team roles) as compared to a 90/10 allocation. Furthermore, employees are more likely to develop a perception of “real team membership” in teams, which they allocate a significant amount of time to (Lyubovnikova et al., 2014, p. 930). In contrast, peripheral team assignments will rather be perceived as “co-acting group membership” and thus have only little impact on the employees’ working patterns and experiences (Lyubovnikova et al., 2014, p. 930). In other words: the
higher the fragmentation of time across teams, the higher the number of absolute team memberships, but also the proportion of ‘time-relevant’ real team memberships.

**Multiteam roles as integrated roles.** Each team membership is characterized by a particular *role* (e.g., Belbin, 1981). Therefore, if organizations decide to adopt MTM structures, they – deliberately or not – assign multiple roles to their employees. Katz and Kahn (1978, pp. 219–220) define a role as “the building block of social systems and the summation of the requirements with which such systems confront their members as individuals”. In reference to Ashforth et al. (2000), I partition this definition into the position of an individual (= role) and the requirements attached to that position (= role identity). As individuals hold multiple roles in multiple teams (I refer to these as multiteam roles), they also develop several role identities, which entail particular role expectations for an individual’s role behavior (Katz & Kahn, 1978). Different role identities are salient at different times and are triggered by interactions with role senders of a role set, such as the members of a particular team (Ashforth et al., 2000). For example, an employee who is currently working on project A receives a call from a co-worker of his second project B. In this situation, the employee will not only shift his attention to project B, but also switch “cognitive gears” (Louis & Sutton, 1991, p. 55) and take up the role identity that he has developed as a member of project B. This process of exiting and entering role identities is referred to as a *role transition* (Ashforth et al., 2000).

In the present study, I focus on *micro* rather than macro role transitions. Micro role transitions refer to the “frequent and usually recurring” transitions in everyday work (Ashforth et al., 2000, p. 472), such as cognitively switching between multiple teams. In contrast, macro role transitions describe infrequent and mostly permanent changes (cf. Ashford & Taylor, 1990), such as assignments to additional teams or projects. Central to the process of micro role transitions are the concepts of *contrast* and *role boundaries*. On the one hand, contrast refers to the extent to which the features of a pair of role identities differ (Louis, 1980). On the other hand, role boundaries describe the “mental fences”
surrounding roles (Zerubavel, 1991, p. 2), which depending on their strength make switching between roles more or less difficult (Ashforth et al., 2000). For example, role identities from different domains (i.e., work domain versus family domain) are likely to be high in contrast as they differ with regard to location, role set members, and role status. Furthermore, they are separated by strong role boundaries, because employees often have little opportunity at work (e.g., access and time) to attend to their family role. Ashforth et al. (2000) refer to those pairs of roles as segmented roles.

In contrast, roles that have low (i.e. flexible and permeable) boundaries and are low in contrast are denoted integrated roles. I consider roles in multiple teams to be rather situated at the ‘integration’ end of the role segmentation-role integration continuum (cf. Ashforth et al., 2000). Although memberships in multiple teams can vary “in tasks, technologies, locations, etc.” to some extent (O’Leary et al., 2011, p. 464), the roles associated with the respective teams are inevitably integrated with respect to the overall organizational setting. Furthermore, research by González and Mark (2005) shows that information workers switch between multiple team contexts more than twelve times per day, indicating that team roles have rather low boundaries.

Role conflict between multiteam roles. Finally, it is important to discuss the consequences of micro transitions between multiple roles: is it ‘good’ or ‘bad’ to hold multiple roles? During the last decades, a large amount of research has been dedicated towards solving this question (for a review and meta-analysis see Tubre & Collins, 2000). Thereby, classical literature on role theory distinguishes between constructs which benefit (e.g., role clarity, role efficacy) and harm (e.g., role conflict, role ambiguity, role overload) individual work outcomes. However, positive and negative role constructs have often been used interchangeably in the sense that they simply represent opposing poles of a continuum (cf. Bliese & Castro, 2000). As an example, Sawyer (1992) even developed a measure of role ambiguity which can be divided into two role clarity dimensions. For reasons of parsimony and to reduce the complexity of my model, I decided to focus on a single construct only: role conflict. Although
MTM has implications for role ambiguity, too (cf. van de Brake et al., 2017), I argue that role conflict better captures the incompatibilities between multiple teams and roles inherent to my model.

Role conflict is defined as “incongruity of the expectations associated with a role” (van Sell, Brief, & Schuler, 1981, p. 44) and has been demonstrated to affect a wide range of individual outcomes, such as job satisfaction, commitment and performance (Jackson & Schuler, 1985; Tubre & Collins, 2000). It is important to note that the concept of role conflict describes a perception of incongruity, which can be traced back to a number of different sources. In this regard, the reasons of perceived role conflict can be classified into several different types, such as person-role conflict, intra-sender and inter-sender role conflict, inter-role conflict, or role overload (for a detailed discussion, see Rizzo et al., 1970; van Sell et al., 1981). In the context of my study, I believe that two sources of role conflict are of particular importance. First, the notion of inter-role conflict merits attention, because it captures the incompatibility of role pressures stemming from one role (or team) with the role pressures arising from a different role (or team; Rizzo et al., 1970). Such conflicts have been described as typical in MTM situations (O’Leary et al., 2012). For example, an employee might receive opposing instructions from two of his or her team leaders and feel torn. Second, person-role conflict describes an incompatibility of an employee’s internal standards or values and his or her required role behavior. This is closely related to the concepts of person-job fit (e.g., Edwards, 1991) and time congruity (Kaufman, Lane, & Lindquist, 1991). As illustrated in my introductory quote, one employee may consider multiteaming as stressful, because s/he would prefer to work in a less fragmented fashion. Meanwhile, another employee may perceive MTM as a reasonable way of structuring work, because it fits his or her individual preferences. This leads me to the notion of IPO, which I propose as an important characteristic of successful multiteam workers.
2.2.2 IPO: an important asset for multiteaming?

I refer to polychronicity as the “preferences regarding organization and structure of one’s time” (Hecht & Allen, 2005, p. 155), which can be aligned on a continuum ranging from monochronic to polychronic (Bluedorn et al., 1992). Whereas polychronic individuals prefer to engage in several activities at the same time, monochronic individuals prefer to do one thing at a time (e.g., Bluedorn, Kalliath, Strube, & Martin, 1999). Following König and Waller (2010), I explicitly exclude behavioral elements from my definition of polychronicity and describe it as an individual orientation or preference. In contrast, the behavioral aspect of actually ‘doing multiple things at the same time’ is referred to as multitasking (König & Waller, 2010; Spink, Cole, & Waller, 2008). Figure 5 summarizes the proposed interrelations of polychronicity, multitasking, and MTM.

![Diagram](image)

**Figure 5.** The relationship between IPO, multitasking and MTM

*Note.* IPO = individual polychronic orientation. MTM = multiple team membership

To better illustrate the concept of polychronic orientation and its relevance in a MTM environment, please consider the following example:
Two managers […] are both planning to write a report in the morning. Both begin writing, and after thirty minutes, both managers receive a phone call. Manager A regards the phone call as an interruption and attempts to reschedule the call for a time later in the day. Manager B answers the phone, has a complete conversation with the caller, and returns to work on the report after the call. Manager A is relatively monochronic because unplanned, unscheduled events are considered interruptions that should be minimized and not allowed to interfere with scheduled activities. Manager B is relatively polychronic because the unscheduled event was handled as a normal part of life, of equal or greater importance than planned activities (i.e., writing the report). (Bluedorn et al., 1992, p. 18)

I chose this scenario, because it very comprehensibly describes the interruptions and switches between working spheres that are also part of multiteam environments (Bertolotti et al., 2015; González & Mark, 2005). Moreover, it demonstrates the importance of a high polychronic orientation for dealing with these challenges and demands. In the following, I want to highlight three particular aspects related to the example by Bluedorn et al. (1992) and thereby discuss the relevance of polychronicity in MTM settings.

**Polychronicity as a continuum.** First, Bluedorn et al. (1992, p. 18) speak of “relatively monochronic” and “relatively polychronic” employees. This points to the importance of considering polychronicity as a continuum rather than two independent poles. In other words, very few individuals will be pure monochronics or polychronics – if they even exist (Bluedorn et al., 1992; Bluedorn et al., 1999; König & Waller, 2010). In fact, most people are in between and tend towards either of both poles to a higher or lower degree (Hecht & Allen, 2005).

Similar to the relative strength of IPO, König and Waller (2010) highlight that jobs and work environments are almost never purely polychronic or monochronic either. In prior research, the retail (Arndt, Arnold, & Landry, 2006; Fournier, Weeks, Blocker, & Chonko, 2013) and sales industries (Conte & Gintoft, 2005), managerial jobs (Bluedorn, 2002; Hecht & Allen, 2005), and work in TMTs (Souitaris & Maestro, 2010) have been described to offer mostly polychronic supplies. Due to the frequent interruptions, multitasking challenges, and complex switches between multiple roles and working spheres
(e.g., Bertolotti et al., 2015; O’Leary et al., 2011), I propose that MTM settings are very polychronic in nature, too. That being said, the notion of ‘relative polychronicity’ reminds us that rather polychronic MTM environments are likely to also include some monochronic work patterns.

**Person-job fit.** Second, the above scenario underlines the importance of person-job fit (e.g., Edwards, 1991) and time congruity perspectives (Kaufman et al., 1991) for the concept of polychronicity (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999): manager B, who is rather polychronic, considers the interruption as his usual working pattern and embraces the distraction. Contrarily, manager A, who is rather monochronic, feels uncomfortable working on two tasks simultaneously and tries to escape the situation by rescheduling the call. Although it may be possible to craft (cf. Tims & Bakker, 2010) the polychronic supplies of a job to some extent (e.g., reschedule a call, use detailed time schedules and blockers, etc.), prior research demonstrates that monochronic individuals report increased psychological strain as well as reduced job satisfaction and commitment in highly polychronic situations (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999). Moreover, in a qualitative study by Cotte and Ratneshwar (1999), a polychronic work environment was referred to as fragmented, confusing, and stressful by monochronics, whereas polychronics used terms such as efficient, realistic, and motivating to describe their jobs. As I have noted above, MTM environments also contain mostly polychronic supplies. From a supplies-values perspective (cf. Kristof, 1996), it is therefore plausible to assume that polychronic individuals are more likely to strive in MTM contexts than their monochronic counterparts.

**Multi-sphering: beyond multitasking.** Third, the notion of preferring to simultaneously engage in multiple “tasks” (Bluedorn et al., 1999, p. 207), “things” (Hall, 1959, p. 178), or “activities” (Bluedorn, 1998, p. 110) merits further attention. As indicated by König and Waller (2010, p. 177), prior research on polychronicity was not very clear when it came to the question of “[w]hat is a task” or the like. Yet, I believe that this is a crucial aspect of the concept – particularly in the context of MTM. As I have noted above (cf. also O’Leary et
multitasking is an important part of multiteaming, but MTM additionally includes much broader switches between different working spheres. Similarly, managers A and B in the above scenario do not only switch between different tasks, but also between different work contexts (including different colleagues, role identities, role expectations, and maybe even projects or teams). In this vein, König and Waller (2010) propose that it might be more accurate to talk about working spheres in the context of polychronicity, instead of referring to tasks only. According to González and Mark (2005, p. 145), a working sphere is “a unit of work that [...] has a unique time frame, involves a particular collaborative structure, and is oriented towards a specific purpose”. Following this, I propose that polychronicity is not only a preference for multitasking, but also for multi-sphering (i.e., simultaneously juggling multiple working spheres). Therefore, a high polychronic orientation does not only represent an important asset for ‘simple’ multitasking situations, but also for the broader context of MTM.

In a nutshell, my above elaborations demonstrate that MTM contexts mainly contain supplies that are demanded by polychronic individuals (cf. also Bertolotti et al., 2015). In consequence, I consider a high polychronic orientation as an important personal asset in MTM situations – not only because it helps to multitask, but also because it facilitates the much broader switches between different working spheres (i.e., multi-sphering). I believe that this has important implications for the processes of role transitions and conflict described above. In the following paragraph, I therefore integrate both lines of argumentation and develop respective hypotheses.

2.2.3 Hypotheses development

I build on role theory⁶ in order to elaborate on the relationship between fragmentation of time, perceived role conflict and IPO. Thereby, I draw on

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⁶ Please note that Pluut et al. (2014) also point to the relevance and twofold nature of role theory (strain and accumulation arguments) in the context of MTM. However, their actual research model is rather based on a job demands-resources framework and does not include role-theoretical constructs.
classical role strain arguments (Goode, 1960), but also refer to more recent advancements, such as work on role identity integration (Callero, 1994; Caza & Wilson, 2009). According to role strain theory (Goode, 1960), the enactment of multiple roles and the related micro role switches are a source of psychological stress and social instability, which ultimately lead to the perception of increased role conflict. In contrast, role identity theory (Callero, 1994; Caza & Wilson, 2009) states that roles are structures that can help to establish routines and pattern work in organizations. In this sense, “roles can be used by individuals for thinking, for acting, for creating structures, and for political ends” (Caza & Wilson, 2009, p. 108). In other words, when individuals identify with and switch between multiple roles, they have a wider range of ‘scripts’ and ‘schemas’ available for their use. In consequence, this increased “work-identity complexity” (Caza & Wilson, 2009, p. 107) may help individuals to make greater sense of roles and role expectations, and thus, decrease role conflict.

I believe that both role strain and role identity theories are well-suited and informative in multiteaming situations. This is particularly due to the nature of multiteam roles, which I have described as rather integrated above (cf. also Ashforth et al., 2000). On the one hand, integrated roles are more often subject to role blurring (i.e., cognitive overlaps between multiple roles), which in turn fosters confusion between roles as well as interruptions due to easy accessibility (Ashforth et al., 2000). This points to the relevance of role strain arguments in MTM settings. On the other hand, however, the similarity and overlaps of integrated roles also facilitate the accumulation of role scripts and schemas drawn from different team contexts (Caza & Wilson, 2009). This, in contrast, is rather supportive of role identity theory. Since both theoretical perspectives appear to be highly relevant in MTM settings, I believe that the respective mechanisms enact strong opposing effects. Therefore, I do not expect to find a direct positive or negative effect of fragmentation of time on perceived role conflict. Rather, I propose that the relationship is dependent on contextual factors such as IPO.
**Perceived role conflict at low levels of polychronic orientation.** Relatively monochronic individuals are likely to perceive a low person-job fit (or time congruity) in MTM settings, because multiteaming offers rather polychronic supplies. As indicated in a meta-analysis by Kristof-Brown et al. (2005), a low person-job fit is related to increased strain and other negative job-related outcomes (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999). Similarly, research on time congruity (e.g., Kaufman et al., 1991) indicates that incompatibility between an individual’s time preferences and the respective organizational supplies produces role strain, resulting in increased role ambiguity and conflict.

Drawing from this research and role strain theory (Goode, 1960), I argue that a low IPO has adverse effects on processes of both inter-role and person-role conflict in multiteaming situations. From the perspective of *inter-role* conflict, relatively monochronic individuals encounter severe problems when it comes to juggling the expectations and demands of multiple team roles (e.g., frequent micro role transitions, competing expectations, prioritization, etc.). From the perspective of *person-role* conflict, monochronics are also dissatisfied with their overall polychronic working environment, as they would prefer to work in a less fragmented fashion. In all, I conclude that relatively monochronic individuals perceive high levels of role conflict when their working time is highly fragmented across multiple teams.

**Perceived role conflict at high levels of polychronic orientation.** In contrast to monochronic employees, the time-related demands of relatively polychronic individuals are perfectly met in MTM contexts, indicating high levels of person-job fit and time congruity. This, in turn, has been shown to enact favorable effects on work-related outcomes (Hecht & Allen, 2005; Kaufman et al., 1991; Kristof-Brown et al., 2005; Slocombe & Bluedorn, 1999), such as decreasing individual strain (Kristof-Brown et al., 2005). Moreover, work by Cotte and Ratneshwar (1999) demonstrates that polychronic employees are motivated by juggling multiple projects at the same time and that being involved in multiple activities simultaneously even represents an important part of those
individuals’ self-conceptions at work. If their polychronic demands are met, they perceive feelings of achievement and accomplishment, efficiency, and success (Cotte & Ratneshwar, 1999). Or in other words, it just “feels good” (Cotte & Ratneshwar, 1999, p. 193). In addition to this, research on role identity and accumulation (e.g., Callero, 1994; Sieber, 1974) indicates that the enactment of multiple roles need not always lead to feelings of strain, but may in effect even reduce perceptions of role ambiguity or conflict. Drawing from this, I propose that role strain arguments are of minor importance for highly polychronic individuals working in a high number of teams. Rather, I point to the relevance of role identity integration, which may even produce favorable consequences for polychronic individuals working in highly fragmented MTM contexts.

In order to determine the consequences of a high fragmentation of time for polychronic individuals, it is important to closely consider the two role-based mechanism that are at play here. From the perspective of inter-role conflict, I argue that taking on multiple roles in multiple teams does not have negative effects on the perception of role conflict for polychronic individuals. Due to the inherent preference for juggling multiple activities simultaneously, they do not mind a high fragmentation of time across teams, are widely resistant to increased strain and react neutral. From the perspective of person-role conflict, however, I argue that relatively polychronic employees even benefit from a high fragmentation of time, because they perceive high congruity between their polychronic demands and the supplies offered by a fragmented MTM environment. This in turn facilitates the integration of multiple role identities and ultimately leads to a superior self-awareness as well as a reduced perceptions of role-conflict at work (Caza & Wilson, 2009). Figure 6 summarizes the effects of the two role-based mechanisms for both, polychronic and monochronic individuals.
My theoretical considerations propose that the net effect of fragmentation of time across teams is strongly dependent on an individual’s polychronic orientation: whereas relatively polychronic employees benefit from working in a high number of teams, their monochronic counterparts are more likely to perceive increased levels of role conflict. To test this, I formulate the following hypothesis.

**Hypothesis 1.** The effect of fragmentation of time across teams on perceived role conflict is moderated by IPO; specifically, at high (low) levels of IPO, fragmentation of time has a negative (positive) effect on perceived role conflict.

**Effects on distal job-related outcomes.** Finally, I am interested in how the effects of fragmentation of time on perceived role conflict are related to distal outcomes, such as job performance, job satisfaction and employee well-being. I
believe that uncovering distal consequences of fragmentation of time is an important endeavor, because it ultimately helps to evaluate the overall impact of MTM on single employees. To the best of my knowledge, however, prior research has not identified any distal consequences\(^7\) of MTM at the individual level. Therefore, I decided to follow the propositions by Hackman and Katz (2010) and integrate a holistic view of performance into my model. Specifically, I use the three constructs of job satisfaction and performance as well as employee well-being, because they respectively describe different facets of individual prosperity at work. Moreover, they are well-established in organizational research: job satisfaction (e.g., Saari & Judge, 2004; Spector, 1997) and performance are often referred to as the most important work-related outcomes in research and practice (e.g., Iaffaldano & Muchinsky, 1985; Judge, Thoresen, Bono, & Patton, 2001). Similarly, employee well-being has been described as the most adequate indicator of effective HRM practices (van de Voorde, Paauwe, & van Veldhoven, 2012).

In line with Hayes and Preacher (2010), I use a two-step approach for investigating the distal consequences of fragmentation of time. First, I introduce single path hypotheses, which deal with the relationships between perceived role conflict and job satisfaction, job performance, and employee well-being respectively. Jackson and Schuler (1985) and Tubre and Collins (2000) have conducted meta-analyses regarding the consequences of role conflict in work settings. Although Tubre and Collins (2000) note that effect sizes are rather small, both studies indicate a negative relationship between role conflict and job performance. Furthermore, Jackson and Schuler (1985) report a negative effect of role conflict on job satisfaction and health-related outcomes. Building on these results and consistent arguments in theoretical work (e.g., Rizzo et al., 1970; van Sell et al., 1981), I propose the following hypotheses:

\(^7\) Please note that job strain and work engagement (cf. Pluut et al., 2014) are not considered to be distal consequences, but rather individual states at work.
Hypothesis 2a. Perceived role conflict is negatively related to job performance.

Hypothesis 2b. Perceived role conflict is negatively related to job satisfaction.

Hypothesis 2c. Perceived role conflict is negatively related to employee well-being.

With regard to hypotheses 1 and 2 (a, b, and c), a moderated mediation model is proposed, in which the predictor-mediator relationship is moderated and the mediator-outcome relationship is linear (Preacher, Rucker, & Hayes, 2007). These relationships are reflected in my overall theoretical model, illustrated in Figure 7. Although hypotheses 1 and 2 (a, b, and c) may be examined by testing the significance of single paths, research indicates that testing individual paths is insufficient for establishing moderated mediation effects (Hayes & Preacher, 2010). In other words, by solely testing hypotheses 1 and 2 (a, b, and c), I cannot draw any conclusions regarding the indirect effects of fragmentation of time on distal outcomes. This, however, was the primary goal of integrating job performance, job satisfaction, and employee well-being into my research model in the first place. Therefore, I provide three final hypotheses, which specify the overall moderated mediation effects predicted in my model.

Hypothesis 3a. The relationship between fragmentation of time and job performance is moderated by IPO and mediated by perceived role conflict; specifically, at high (low) levels of IPO, the indirect effect of fragmentation of time on job performance is positive (negative).

Hypothesis 3b. The relationship between fragmentation of time and job satisfaction is moderated by IPO and mediated by perceived role conflict; specifically, at high (low) levels of IPO, the indirect effect of fragmentation of time on job satisfaction is positive (negative).
Hypothesis 3c. The relationship between fragmentation of time and employee well-being is moderated by IPO and mediated by perceived role conflict; specifically, at high (low) levels of IPO, the indirect effect of fragmentation of time on employee well-being is positive (negative).

Figure 7. Conceptual model and time of measurement (study 1)

Note. IPO = individual polychronic orientation. Box frames represent the time of measurement of the constructs in the model (cf. lower left corner).

2.3 Methods

2.3.1 Sample

The SoSci Panel. Data for the present study was collected via the online respondent pool SoSci Panel (for a detailed description of the panel, see chapter 1.6.2 or Leiner, 2016). There are three main reasons why I considered the SoSci Panel as an appropriate and valuable database for the present study: first, prior research has observed that MTM is particularly common for highly-educated employees working in sectors such as product or software development (i.e. knowledge workers; cf. Bertolotti et al., 2015; O’Leary et al., 2012). Since the SoSci Panel’s population is mostly comprised of individuals holding a degree of higher education, I expect to also find high levels of MTM in my sample.
Furthermore, the use of a Germany-based sample represents a potentially interesting extension to prior research on MTM (e.g., descriptive comparisons to the exploratory study by Mortensen et al., 2007).

Second, the panel’s population has actively and voluntarily decided to sign up for participation in the SoSci Panel due to general interest in academic research. In this vein, participants receive up to four study invitations per year (Leiner, 2016) and, based on their personal interests, decide to take part or not. I believe that this is a strong benefit of the SoSci Panel: on the one hand, prior research shows that questionnaire-experienced test persons are more able to focus on the actual content of a survey, resulting in more accurate responses (Leiner, 2016). On the other hand, work by Groves et al. (2006) demonstrates that topic interest is one of the best predictors for data quality. Both criteria, experience and interest, need not always be the case in collaborations with organizations. Moreover, the content of my study (i.e. perceptions of role conflict) may represent a critical topic for employees if the study is conducted in an organizational setting. ‘Forced’ participation (e.g., pressure from the HR department or supervisors) and anonymity skepticism (e.g., disclosure of results to supervisors or top-management) may lead to biased responses. In an independent and anonymous survey such as the SoSci Panel, however, these biases can be mostly excluded.

Finally, I believe that the population heterogeneity of the SoSci Panel enhances the generalizability of my findings. Although prior research has described population homogeneity as a major drawback of classic convenience samples (e.g., student samples), the organization of the SoSci Panel as a convenience pool rather than a unique sample eliminates these concerns (cf. Leiner, 2016). In this sense, I argue that applying panel data across different industries even represents an important advancement of research on MTM. Prior studies have primarily relied on data from single firms (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012), which, of course, was due to the team-level focus of this work. Since my study particularly looks at a universal personality
concept such as IPO, however, it is possible to use a more heterogeneous dataset.

**Application process and quality checks.** It is important to note that the SoSci Panel solely functions as an interface between researcher and test persons by forwarding an email containing a cover letter as well as a link to the online survey. Both, content and format of the survey instruments are the responsibility of the researcher. Therefore, the SoSci Panel uses a number of checks to ensure quality and relevance of the survey for the participants.

In order to get access to the panel, I had to undergo a three-step application process. First, I had to hand in an application form, which asked me to outline my research project, the research questions, and the intended methodological proceedings. Furthermore, I was required to pretest my questionnaires with experts in the fields of survey design and organizational behavior. Shortly after submission, the study content and methodological design were classified as suitable for the SoSci Panel. In the second step, the questionnaires and general information on my study were forwarded to two anonymous reviewers (i.e. experts in the field of team research) who were asked to evaluate the quality and focus of my study. Based on a double-blind peer review process, I received valuable feedback for improvement of my survey instruments regarding both, content and formatting. Moreover, both reviewers suggested to conditionally accept my study. In the third step, I adjusted the questionnaires based on the reviewers’ feedback and resubmitted my survey. After my study was finally accepted, I collaborated closely with the SoSci Panel during the survey phase, in order to ensure a high-quality technical implementation (e.g., matching of responses over survey waves, design of email cover letters, etc.).

**Sample characteristics.** As noted above, the SoSci Panel allows researchers to place restrictions on the invited test persons. In this sense, I asked the SoSci Panel to remove individuals who are currently unemployed, self-employed or still enrolled at a university from the study invitation list. Furthermore, I double-checked to exclude individuals who are currently not part of one or
multiple teams in their organization: first, I stated in the cover letter that the survey is only relevant for individuals who currently work in one or multiple teams. Second, I used a filter question in the beginning of my survey, which asked the participants to indicate their number of team memberships. If a test person stated to not be part of a team, s/he was filtered out and forwarded to the end of the online questionnaire.

In the first survey wave, 1’034 individuals followed the link to my survey. After elimination of invalid responses (mostly due to incomplete records and my teamwork filter question), I was left with a final sample of 740 individuals at time 1. In the second survey wave, 401 individuals who had already taken part in the first questionnaire returned to the survey, yielding a sample mortality of 339 individuals between the two waves. Furthermore, I had to drop 60 cases due to invalid data at time 2. In consequence, my final data set comprises 341 individuals who took part in both survey waves and indicated to be part of one or multiple teams in their daily work routine.

On average, the participants were 44.6 years old and mostly male (59 percent). As expected, most participants hold a degree of higher education: 62.5 percent graduated from a university and 15.9 percent from a university of applied science. In addition, 15.3 percent completed a primary vocational education and 6.2 percent a secondary vocational education. Consistent with the high levels of education, most participants indicated to earn a net wage (3.2 percent: 500-1’000 EUR; 9.7 percent: 1’000 – 1’500 EUR; 24.0 percent: 1’500-2’000 EUR; 32.6 percent: 2’000-3’000 EUR; 16.4 percent: 3’000-4’000 EUR; 14.1 percent: more than 4’000 EUR) above the German average, which was 1’840 EUR in 2016 (Statistisches Bundesamt, 2017). Both, the high levels of education and income, provide evidence to the high percentage of so-called ‘knowledge workers’ (cf. Bertolotti et al., 2015) in my sample.

In addition, I collected information on the organizational affiliation of the test persons. The median size of the participants’ firms was 350 employees. Concerning industries, the participants indicated to work in the public sector
Study 1 – Multiple teams, multiple roles, multiple consequences: are polychronics the better multiteamers?

(37.5 percent), service industry (31.4 percent), production industry (15.0 percent), health industry (9.1 percent), financial industry (5.3 percent), and retail industry (1.8 percent). Moreover, the test persons reported to have an average organizational tenure of 12.0 years and have held their current jobs for an average of 7.1 years.

**Prevalence of MTM.** On average, the participants reported to simultaneously work in 2.84 teams (SD = 1.98), which is very similar to prior studies on MTM (e.g., Mortensen et al., 2007; Pluut et al., 2014). More than 90 percent of the participants worked in five or less teams (23.8 percent: one team; 26.4 percent: two teams; 26.7 percent: three teams; 10.0 percent: four teams; 6.7 percent: five teams; 6.5 percent: six or more teams), with the maximum number being 18 team memberships. Furthermore, it is interesting to note that 86.2 percent of the participants indicated to actually work in more than one team at the same time. This percentage is comparable to prior studies (cf. Mortensen et al., 2007; O’Leary et al., 2011) and once again underlines the relevance of MTM in organizational practice.

2.3.2 Measures

The first questionnaire was distributed to the participants in February 2017. Three months later, in May 2017, the second questionnaire was sent out. Both questionnaires were administered in German. If no German version of a scale was available, I used a double-blind back-translation procedure to ensure content similarity with the English scales (Brislin, 1986). Since my theoretical model particularly focuses on the causal relationship between fragmentation of time and perceived role conflict, I collected information on the fragmentation of time and polychronic orientation during the first wave, and included the role conflict scale in the second questionnaire (cf. Figure 7). Furthermore, the second questionnaire contained questions regarding the dependent variables (i.e., job performance, job satisfaction, and employee well-being).
**Fragmentation of time.** I asked the participants to indicate their number of team memberships during the past six months and write down the percentage of time they spent on each team. In line with Pluut et al. (2014), I then applied Simpson’s (1949) diversity index\(^8\) in order to compute the fragmentation of time across teams. The value of the Simpson index \(D\) ranges between 0 and 1. Whereas a value of 0 means that “all working time is allocated to a single team” (i.e., no MTM), a value of 1 indicates “a fully balanced distribution of time across several teams” (Pluut et al., 2014, p. 340).

**IPO.** To assess IPO, I used eight items of the individualized version (Conte & Gintoft, 2005; Conte, Rizzuto, & Steiner, 1999) of the Inventory of Polychronic Values (IPV; Bluedorn et al., 1999). The IPV is a well-established measure in organizational research and has already been applied by numerous studies (Arndt et al., 2006; Fournier et al., 2013; Mohammed & Nadkarni, 2014; Slocombe & Bluedorn, 1999; Souitaris & Maestro, 2010). Furthermore, it is available in German (König, Bühner, & Mürling, 2005). Respondents were asked to indicate their degree of agreement with seven statements regarding one’s polychronic orientation (e.g., ‘I like to juggle several activities at the same time’) on a five-point Likert scale (1=‘not at all’; 5=‘to a large extent’). In accordance with the original scale (Bluedorn et al., 1999), three items were reversed scored. Cronbach’s \(\alpha\) was .85, indicating similar internal consistency as in prior studies (e.g., Conte et al., 1999).

**Perceived role conflict.** I applied six items of the classical role conflict scale by Rizzo et al. (1970), in order to measure individual perceptions of role conflict. I believe that this measure strongly fits my role-theoretical argumentation, because it includes both facets, inter-role and intra-role conflict (Bedeian, Mossholder, Kemery, & Armenakis, 1992). Moreover, the validity of this role conflict measure has been replicated in extant research (e.g., Harris & Bladen, 1994; Netemeyer, Burton, & Johnston, 1995; Netemeyer, Johnston, & Burton,

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\(^8\) For a detailed explanation of Simpson’s diversity index and its application in the context of MTM, please see Pluut et al. (2014: 339-340).
1990; Smith, Tisak, & Schmieder, 1993). The scale contains items regarding the perception of role conflict at work (e.g., ‘I receive incompatible requests from two or more people’; ‘I have to do things that should be done differently’) and participants indicated their degree of agreement on a five-point Likert response scale (1=’not at all’; 5=’to a large extent’). The internal consistency estimate was $\alpha = .85$.

**Dependent variables.** To assess job performance, I asked the participants about their goal accomplishment during the past three months (i.e., the period between the first and second survey wave). In particular, the participants indicated to which percentage (0-100 percent) they accomplished the goals which they had agreed on with their direct supervisor (cf. Kunze, Böhm, & Bruch, 2013).

To measure job satisfaction, I used a single-item measure which refers to the overall satisfaction of the participants with their jobs: ‘If you consider everything that is part of your job (e.g., tasks, organizational procedures, collaboration with colleagues and supervisors, compensation, etc.), how satisfied are you with your job overall?’ (cf. Oshagbemi, 1999). Participants stated their satisfaction on a 5-point Likert response scale (1=’very unsatisfied’; 5=’very satisfied’). Several studies have supported the validity and reliability of single-item job satisfaction measures (e.g., Dolbier, Webster, McCalister, Mallon, & Steinhardt, 2005; Oshagbemi, 1999; Wanous, Reichers, & Hudy, 1997). In fact, Oshagbemi (1999) even report that single-item measures of job satisfaction are superior to multiple-item measures, if the objective is to measure overall satisfaction, rather than satisfaction with different aspects of a job.

Finally, I applied the five-item version of the World Health Organization (WHO) well-being scale (WHO-5; Bech, Gudex, & Johansen, 1996), in order to measure employee well-being. The WHO-5 corresponds with the WHO’s definition of health as the active presence of social, mental, and physical well-being and has been translated into more than thirty languages (Bech et al., 1996), such as German (Brähler, Mühlau, Albani, & Schmidt, 2007). The items of the
WHO-5 are presented as statements (e.g., ‘I feel cheerful and good in spirits’) and the participants were asked to indicate their agreement with these on a five-point Likert response scale (1=‘strongly disagree; 5=‘strongly agree’). Cronbach’s α was .83, yielding an acceptable internal consistency.

**Control variables.** To account for omitted variable bias and limit the risk of endogeneity, I included a set of control variables into my analysis. Thereby, I distinguished between controls that are related to the participants’ personal characteristics and controls that specify the organizational context they are embedded in. All control items were assessed by the participants during the first or second survey wave.

With regard to personal characteristics, I followed prior research on role conflict (e.g., Rizzo et al., 1970) and included the gender and age (ln) of the participants, as well as their organizational tenure.

With regard to the organizational context, the following controls were used: first, I included the temporal stability of team memberships, because prior research (cf. Ashforth et al., 2000) demonstrates that frequent macro switches between different (team) contexts foster confusion among individuals and thus are likely to influence the perception of role conflict. To measure the temporal stability of team memberships, I asked the participants to indicate their degree of agreement with two items (‘In my organization, the team members usually remain on a team over a long period of time.’; ‘In my organization, there are usually no changes in the composition of a team.’), which I adapted from the temporal stability scale by Slotegraaf and Atuahene-Gima (2011). The participants indicated their agreement on a five-point Likert response scale (1=‘strongly disagree’; 5=‘strongly agree’). The internal consistency estimate α was .79.

Second, I controlled for firm size (ln), because size has been found to increase organizational complexity (e.g., Hall, Johnson, & Haas, 1967) and thus may lead to increased levels of employee role strain (cf. Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964).
Third, *industry affiliation* was included⁹, as industry-specific job characteristics may interfere with my conceptual model. Prior research acknowledges that the perceptions of role conflict vary across jobs and industries (e.g., Walker, Churchill, & Ford, 1975). Moreover, extant work on polychronicity assumes that some industries (e.g., the retailing industry; Arndt et al., 2006; Fournier et al., 2013) are more polychronic in nature than others.

Finally, I asked the participants to evaluate their perceptions of organizational support (POS). POS theory states that perceived support by the organization leads to favorable individual outcomes, such as reduced strain or increased satisfaction and performance (Rhoades & Eisenberger, 2002). In this sense, Stamper and Johlke (2003) found that POS reduces perceptions of role conflict and also moderates roles stress – outcome (i.e., satisfaction and task performance) relations. To measure POS, I used five items (e.g., ‘The organization I work for strongly considers my goals and values’) of the well-established Survey of POS by Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades (2001). Participants indicated their degree of agreement with the statements on a five-point Likert response scale (1=‘strongly disagree’; 5=‘strongly agree’). Cronbach’s α for the POS measure was .90.

### 2.4 Results

#### 2.4.1 Descriptive statistics

Means, *SD*s, and intercorrelations among the variables are presented in Table 3. In general, the correlations are in line with the hypothesized relationships in my model, such as negative correlations between IPO and perceived role conflict, as well as between perceived role conflict and the distal outcomes (i.e., job performance, job satisfaction, and employee well-being).

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⁹ Specifically, I included five industry dummy variables (production, service, finance, retail, and health; public sector was used as reference and thus excluded). Since all industry dummy variables showed no statistically significant correlations with the study variables, I excluded them from the final analyses in order to increase the degrees of freedom (Becker et al., 2016).
Table 3. Means, standard deviations, and correlations (study 1)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fragmentation of time</td>
<td>.40</td>
<td>.28</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IPO</td>
<td>2.84</td>
<td>.75</td>
<td>.13*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Perceived role conflict</td>
<td>2.49</td>
<td>.88</td>
<td>-.05</td>
<td>-.12*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Job performance</td>
<td>84.71</td>
<td>15.52</td>
<td>.06</td>
<td>.09</td>
<td>-.35**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Job satisfaction</td>
<td>3.61</td>
<td>.80</td>
<td>.10</td>
<td>.13*</td>
<td>-.50**</td>
<td>.36**</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Employee well-being</td>
<td>3.27</td>
<td>.77</td>
<td>.07</td>
<td>.22**</td>
<td>-.44**</td>
<td>.26**</td>
<td>.50**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Gender</td>
<td>1.59</td>
<td>.49</td>
<td>-.10</td>
<td>.01</td>
<td>-.12*</td>
<td>.07</td>
<td>.05</td>
<td>-.01</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Age (ln)</td>
<td>3.76</td>
<td>.26</td>
<td>.05</td>
<td>.09</td>
<td>-.01</td>
<td>.06</td>
<td>.03</td>
<td>.17**</td>
<td>-.10</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Organizational tenure</td>
<td>12.03</td>
<td>10.53</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td>.04</td>
<td>.07</td>
<td>.10</td>
<td>-.09</td>
<td>.60**</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. Temporal stability of team memberships</td>
<td>2.37</td>
<td>1.01</td>
<td>.03</td>
<td>.04</td>
<td>.07</td>
<td>-.15**</td>
<td>-.04</td>
<td>-.06</td>
<td>.07</td>
<td>-.03</td>
<td>-.03</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Firm size (ln)</td>
<td>6.09</td>
<td>2.67</td>
<td>.09</td>
<td>.03</td>
<td>.06</td>
<td>-.05</td>
<td>-.07</td>
<td>-.07</td>
<td>-.13*</td>
<td>.12</td>
<td>.12*</td>
<td>.05</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12. POS</td>
<td>3.16</td>
<td>.95</td>
<td>.12*</td>
<td>.30**</td>
<td>-.43**</td>
<td>.17**</td>
<td>.49**</td>
<td>.33**</td>
<td>.01</td>
<td>-.07</td>
<td>-.07</td>
<td>-.01</td>
<td>-.18**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. N = 341 individuals. IPO = individual polychronic orientation. POS = perception of organizational support. Industry dummies were not included, as they were also dropped for the final analyses (cf. footnote 5).  
* p < .05. ** p < .01.
Furthermore, there is no significant correlation between fragmentation of time across teams and perceived role conflict. This is supportive of the notion of two opposing role-theoretical mechanisms (i.e., role strain and role identity arguments).

The average fragmentation of time in my sample was .40 (SD = .28; Min = .00; Max = .90). As I have described above, the fragmentation of time index ranges between 0 and 1, with higher values indicating higher levels of fragmentation (cf. also Pluut et al., 2014). Since these values are difficult to interpret in absolute terms, I compared them to previous work by Pluut et al. (2014). They reported an average fragmentation of time of .23 (SD = .22) in their study. In this light, I presume to have relatively high levels of fragmentation in the present sample.

2.4.2 Hypotheses testing

Following recommendations by Preacher et al. (2007), I used a two-step procedure to investigate the hypotheses in my moderated mediation model. First, I ran multiple linear regressions to test the single path hypotheses 1 and 2 (a, b, and c). Second, I applied normal theory tests and bootstrapping analysis (cf. also Eisenbeiss, van Knippenberg, & Boerner, 2008) to assess the significance of conditional indirect effects in my model (hypotheses 3 a, b, and c).

Hypothesis 1 predicts that the relationship between fragmentation of time and perceived role conflict is moderated by IPO. To test this, I first ran a controls-only model (cf. Table 4, first column), then included the predictor (i.e., fragmentation of time; cf. Table 4, second column), and finally the moderator (i.e., IPO) and the interaction term (i.e., fragmentation of time × IPO; cf. Table 4 third column). Table 4 shows that the interaction term has a significant negative effect on perceived role conflict, thus supporting hypothesis 1.
### Table 4. Mediator model (study 1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.13*</td>
<td>-.13*</td>
<td>-.13*</td>
</tr>
<tr>
<td>Age (ln)</td>
<td>-.04</td>
<td>-.04</td>
<td>-.03</td>
</tr>
<tr>
<td>Organizational tenure</td>
<td>.04</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Temporal stability</td>
<td>.07</td>
<td>.08</td>
<td>.07</td>
</tr>
<tr>
<td>Firm size (ln)</td>
<td>-.04</td>
<td>-.04</td>
<td>-.05</td>
</tr>
<tr>
<td>POS</td>
<td>-.44***</td>
<td>-.43***</td>
<td>-.43***</td>
</tr>
<tr>
<td><strong>Predictor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fragmentation of time</td>
<td>-.01</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td><strong>Moderator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPO</td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>Fragmentation of time × IPO</td>
<td></td>
<td></td>
<td>-.14**</td>
</tr>
<tr>
<td><strong>Δ R²</strong></td>
<td>.00</td>
<td>.02*</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.21</td>
<td>.21</td>
<td>.23</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.19</td>
<td>.19</td>
<td>.21</td>
</tr>
</tbody>
</table>

*Note.* Variables were mean-centered prior to analysis. Standardized beta coefficients are reported. Statistical tests are based on two-way tests. POS = perception of organizational support. IPO = individual polychronic orientation.

* p < .05.   ** p < .01.   *** p < .001.

In order to better assess the nature of the moderation effect, I plotted the interaction (cf. Figure 8). As predicted in hypothesis 1, simple slopes tests show that the relationship between fragmentation of time and perceived role conflict is negative and significant (*p < .05*) at high levels of IPO (+1 SD). Meanwhile, at low levels of IPO (-1 SD), the relationship is positive and marginally significant (*p = .06*). Unexpectedly, yet also not part of my hypothesized model, individuals who are high (low) in polychronic orientation appear to perceive increased (reduced) levels of role conflict in low fragmentation of time environments. This finding merits further attention and will be taken up in the discussion of my paper.
Next, I investigated hypotheses 2a, 2b, and 2c, which predict negative relationships between perceived role conflict and the distal outcomes (i.e., job performance, job satisfaction, and employee well-being). To test this, I ran three linear regression models (step 1: controls-only; step 2: inclusion of perceived role conflict) and changed the outcome variables respectively. As displayed in Table 5, I find negative relationships between perceived role conflict and all three distal outcomes, thus supporting hypotheses 2a, 2b, and 2c.

Finally, I used two approaches to address the conditional indirect effects formalized in hypotheses 3a, 3b, and 3c. First, I applied normal theory tests (Preacher et al., 2007) of the indirect effects of fragmentation of time on the distal outcomes (i.e., job performance, job satisfaction, and employee well-being) at low (-1 SD), mean, and high (+1 SD) levels of IPO. For all three distal outcomes, the normal theory tests indicate that fragmentation of time has a significant
positive (negative) effect at high (low) levels of IPO. At mean levels of the moderator, however, the effects are insignificant (cf. Table 6).

Table 5. Outcome model (study 1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Job performance</th>
<th>Job satisfaction</th>
<th>Well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 1</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.09</td>
<td>.05</td>
<td>.06</td>
</tr>
<tr>
<td>Age (ln)</td>
<td>.05</td>
<td>.04</td>
<td>-.06</td>
</tr>
<tr>
<td>Organizational tenure</td>
<td>.02</td>
<td>.03</td>
<td>-.15**</td>
</tr>
<tr>
<td>Temporal stability</td>
<td>-.15**</td>
<td>-.13*</td>
<td>.15*</td>
</tr>
<tr>
<td>Firm size (ln)</td>
<td>-.01</td>
<td>-.02</td>
<td>-.04</td>
</tr>
<tr>
<td>POS</td>
<td>.16**</td>
<td>.02</td>
<td>.50***</td>
</tr>
<tr>
<td>Predictor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fragmentation of time</td>
<td>.06</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Mediator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived role conflict</td>
<td>-.32***</td>
<td>-.35***</td>
<td>-.37***</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>.08**</td>
<td>.10***</td>
<td>.11***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.06</td>
<td>.15</td>
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</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.04</td>
<td>.12</td>
<td>.25</td>
</tr>
</tbody>
</table>

Note. Variables were mean-centered prior to analysis. Standardized beta coefficients are reported. Statistical tests are based on two-way tests. POS = perception of organizational support.

* $p < .05$.  ** $p < .01$.  *** $p < .001$.

Second, I applied bootstrapping (10,000 bootstrap samples) to estimate 95 percent confidence intervals for the magnitude of the indirect effects of fragmentation of time on job performance, job satisfaction, and employee well-being respectively. I used these to test the significance of the indirect effects and found that, for all three distal outcomes, only the confidence intervals for mean levels of IPO include zero (cf. Table 6). Thus, both the normal theory and confidence interval tests support the moderated mediation effects predicted in hypotheses 3a, 3b, and 3c.
In all, the results provide strong support to my conceptual model. I found that the relationship between fragmentation of time across teams and perception of role conflict strongly depends on an individual’s polychronic orientation: monochronics perceive increased role conflict when their working time is fragmented across multiple teams. Meanwhile, polychronics even report declining levels of role conflict, when fragmentation of time increases. Ultimately, these effects are also conveyed to distal outcomes, such as job performance, job satisfaction, and well-being.

### 2.5 Discussion

The goal of my research was to investigate how the degree of polychronic orientation of individual employees affects their handling of multiple roles in multiple teams. Drawing on classical role strain theory (e.g., Goode, 1960) as well as more recent work on role integration (Callero, 1994; Caza & Wilson,
2009) and micro-role transitions (Ashforth et al., 2000), I proposed two mechanisms (i.e., inter-role conflict and person-role conflict) leading from fragmentation of time to perceptions of role conflict. Moreover, I included distal outcomes into my model (i.e., performance, satisfaction, and well-being), in order to comprehensively examine the consequences of multiteaming on individual prosperity at work (Hackman & Katz, 2010). In sum, the proposed relationships were strongly supported in my sample of 341 German employees. I believe that the findings offer several intriguing implications for organizational theory and practice.

### 2.5.1 Theoretical implications

My work particularly contributes to three areas of research, namely MTM, role theory, and polychronicity. I decided to structure my discussion according to those areas of research and discuss the main implications below.

**MTM.** Primarily, my study advances research on individual multiteaming. First, I take up propositions that point to MTM as a ‘double-edged sword’ (e.g., O’Leary et al., 2011; van de Brake et al., 2017). Rather than focusing on the divergent effects on multiple outcomes such as individual strain and engagement (Pluut et al., 2014), however, I was able to show that multiteaming can actually have contradictory effects on a single individual state (i.e., perception of role conflict). Depending on their levels of IPO, participants reported either increased or reduced perceptions of role conflict at an increasing fragmentation of time across multiple teams. In other words, my study revealed that MTM is not only double-edged in the sense that it has varying effects on different outcomes, but even impacts a unique individual state in multiple ways. I am aware that this makes research on multiteaming even more complex. Nevertheless, I join in with Mathieu et al. (2008, p. 463) and urge MTM researchers to “embrace the complexity of current team arrangements […] [r]ather than viewing these complex features of organizational teams as confounds or design problems to overcome”.

Second, to the best of my knowledge, I am the first to explicitly address the question of ‘what it takes to be a successful multiteam worker’ (e.g., competence and personality; Mortensen et al., 2007). Several studies (e.g., Bertolotti et al., 2015; O’Leary et al., 2011) have called for research that examines the impact of individual polychronicity on multiteaming success. Similarly, research on individual-level boundary conditions of MTM is very scant (cf. Bertolotti et al., 2015; van de Brake et al., 2017). I offer answers to these calls and provide evidence that an individual’s degree of IPO influences the relationship between fragmentation of time and perceived role conflict in a decisive way. In this light, I invite future research to investigate the relevance of further personality concepts and competencies in the context of MTM.

Third, my research empirically shows that MTM does not only influence the performance of single teams (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012), but also the performance of single employees. Beyond performance, I found that multiteaming affects the employees’ satisfaction with their jobs as well as their well-being at work. Taken together, my results underline claims by van de Brake et al. (2017) who suggest that the detection of positive team-level effects is not sufficient to refer to MTM as an outright beneficial HRM practice.

**Role theory.** My work also holds valuable implications for role theory. While developing the theoretical framework for the present study, I integrated three related, yet so far mostly demarcated perspectives of role theory (i.e., role strain, role integration, and role transitions). Especially the distinction between role strain (Goode, 1960) and role integration (Caza & Wilson, 2009) may represent a promising theoretical foundation to discuss the twofold nature of fragmented working environments (cf. also Pluut et al., 2014). In reference to classical work by Rizzo et al. (1970), I acknowledged that the perception of role conflict resembles an individual state that can be traced back to a number of different sources (cf. also Bedeian et al., 1992). Drawing on the notions of inter-role and person-role conflict, I closely considered the mechanisms that determine the effect of fragmentation of time on processes of role strain and integration, and
ultimately on perceived role conflict. I believe that future work on contemporary forms of collaboration (Wageman et al., 2012) as well as research on the interplay of multiple role identities (e.g., Leavitt, Reynolds, Barnes, Schilpzand, & Hannah, 2012; Ramarajan, 2014) can strongly benefit from my theoretical reasoning.

Polychronicity. Finally, my work also contributes to research on polychronicity. Extant studies in this field of research were often based on the assumption that specific jobs or industries offer more polychronic supplies than others (Arndt et al., 2006; Conte & Gintoft, 2005; Fournier et al., 2013; Souitaris & Maestro, 2010). In this sense, those studies only investigated the relevance of a high IPO in ‘high polychronic supplies’ environments. However, the actual degree of polychronicity as well as the possibility that specific work environments may be mostly monochronic in nature were not accounted for (König & Waller, 2010). Other studies assessed the fit between polychronic values and supplies by comparing assessments of individual and collective polychronicity measures (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999). Without trying to diminish the valuable insights of this research, I argue that such comparisons do not allow for a specification of the sources of polychronic supplies in the respective teams or organizations.

My study moves beyond these limitations, as I evaluated the fit between IPO and a distinct and meaningful context-related concept such as fragmentation of time, resulting in a number of intriguing insights: on the one hand, I found that polychronics indeed appear to have an edge over their monochronic counterparts in highly fragmented environments (cf. Figure 8). From the perspective of inter-role conflict, relatively polychronic individuals do not mind juggling multiple team demands simultaneously. From the perspective of person-role conflict, their preferences for polychronic supplies are strongly satisfied (cf. Figure 6). On the other hand, however, my analysis also revealed that monochronic individuals experience lower levels of role conflict when fragmentation of time across multiple teams is low (cf. Figure 8). In turn, the reduced perception of role conflict yields positive and significant indirect effects
on individual performance, satisfaction, and well-being. I believe that this finding can be traced back to processes of person-role conflict mainly, because monochrons prefer to work in environments with a clear focus and low levels of fragmentation (Bluedorn et al., 1992; Cotte & Ratneshwar, 1999). Meanwhile, processes of inter-role conflict are likely to play a minor role, as low levels of fragmentation obviously do not include frequent switches between multiple team contexts (i.e., role transitions; Ashforth et al., 2000).

According to Hecht and Allen (2005), it is crucial to focus on monochronicity just as much as on polychronicity, because neither of both personality dispositions is ‘superior’ to the other. Similarly, Slocombe and Bluedorn (1999) state that “[n]othing about polychronicity implies that more work is being done or even that polychronic individuals are trying to get more work done (i.e. work faster)”. If anything, Slocombe and Bluedorn (1999) rather argue for the opposite pattern. In line with this, my study once again underlines the relevance of person-job fit (Edwards, 1991) and time congruity perspectives (Kaufman et al., 1991) in the study of polychronicity. That being said, however, it will be interesting to see how an increasing turn towards contemporary forms of collaboration (e.g., Wageman et al., 2012) will affect the organizational relevance of polychronicity as an “important employee trait that has specific and clear relevance to the eclectic and fast-paced” working world (Arndt et al., 2006, p. 320).

2.5.2 Practical implications

Concerning practical implications, my work demonstrates the relevance of closely selecting the ‘right’ employees for fragmented MTM contexts. Although it appears that MTM yields mostly beneficial effects on team performance and effectiveness (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012), the consequences for individual employees are not outright positive. In fact, the results even show that a high fragmentation of time can have positive as well as negative indirect effects on employee performance, satisfaction, and
well-being. Ultimately, I conclude that it is justified to speak of MTM as a valuable HRM practice for some employees only.

In this light, I urge organizational decision-makers and leaders to pay close attention to individual preferences in the resource allocation process in MTM settings – not only with respect to skills and competences (cf. O’Leary et al., 2011), but also concerning personality dispositions. Thereby, leaders must be aware of their own polychronic orientation as well as be empathic about the preferences of subordinates. According to Bluedorn et al. (1992, p. 24), “you need to recognize your own orientation and that of your subordinate because you must take both into account” to be successful over the long term. Moreover, Bluedorn and Denhardt (1988) argue that organizations that are aware of their employees’ time orientations have an advantage over their competitors. My research provides support to this proposition in the context of MTM. Obviously, I recognize that the concept of polychronicity may be difficult to grasp in organizational practice. However, as demonstrated in the introductory quote of this study, employees seem to be fully aware of their individual preferences for multiteaming. Thus, it is up to organizations and leaders to simply talk to their employees and account for their polychronic orientation.

2.5.3 Limitations and directions for future research

The results of my study have to be interpreted in consideration of the following limitations. First, I applied panel data from a convenience pool (i.e., SoSci Panel) that consisted of employees from different firms. Although I accounted for firm characteristics, such as firm size, industry, POS, and the average stability of team memberships, it is impossible to rule out confounding effects resting upon inter-firm differences. That being said, I believe that two aspects of my study limit such concerns: on the one hand, my measure of fragmentation of time focuses on micro transitions between multiple teams (Pluut et al., 2014), which occur frequently in all kinds of organizations (Ashforth et al., 2000). On the other hand, the concept of IPO represents a universal and stable personality trait that is mostly independent from contextual influences (Conte et al., 1999; Conte &
Jacobs, 2003). Second, I used self-rated measures of performance, satisfaction, and well-being. Moreover, the distal outcomes were measured at the same time as perceptions of role conflict, thus strongly restricting causal inferences. Due to my study’s main focus on the relationship between fragmentation of time, IPO, and perceived role conflict, however, I suggest considering the analysis of indirect effects as rather supplementary.

Beyond limitations, my study offers multiple directions for future research. First, I propose that future research examines further characteristics of successful multiteamers, because “carryover effects” (Hecht & Allen, 2005, p. 159) point to the importance of capturing an individual’s personality seen as a whole. McClelland’s (1961, 1985) basic needs theory appears to be a promising framework to refer to. While achievement-oriented individuals may benefit from an increasing complexity of tasks and challenges, power-oriented employees may profit from enlarged networks and spheres of influence in multiteaming situations (McClelland, 1985; O’Leary et al., 2011). In contrast, frequent switches between team contexts are likely to restrict relationship building with co-workers, thus resulting in negative effects on affiliation-oriented individuals. Concerning individual competences, Mortensen et al. (2007) propose individual discipline, interpersonal competence, social skills, and task management skills as important assets in MTM contexts. Moreover, I believe that a positive stress mindset (cf. Crum, Salovey, & Achor, 2013) may help to deal with stressful situations in MTM contexts. Second, I invite scholars to examine potential boundary conditions that facilitate the demands of multiteaming for both, polychronics and monochronics. For example, future studies could address topics such as co-creation of team allocation decisions, the use of tailored (and functioning) project-management software, as well as clear rules concerning interruptions and prioritization of different projects. Finally, research by Miron-Spektor, Erez, and Naveh (2011) points to the importance of closely considering the personality-based composition of teams. In this vein, I suggest that future research investigates the collaboration of team members with different personal dispositions in MTM contexts. For example, I presume
that a team that solely consists of polychronics is likely to encounter difficulties in prioritization and task completion and might benefit from the addition of a rather monochronically-oriented team member.

In all, my work addresses an important and intensively discussed gap in research on MTM, namely the relationship between IPO and multiteaming success (e.g., Bertolotti et al., 2015). I hope that future research takes up my findings and addresses the above directions, in order to further advance our understanding of the phenomenon of MTM.
3 Study 2 – MTM level and heterogeneity, organizational social capital and performance: a firm-level study

3.1 Introduction

You could feel the tension in the meeting room team BLUE had gathered. Not only was their project in an absolute crisis, but also the situation between Paul and Helen had escalated – once again. Only ten minutes ago, the entire team had come together in order to get the project back on track, when suddenly Paul received a call and moments later stood up to leave the room.

Paul: “Sorry guys, it was Ralph from team RED. This is more urgent, they need me.”

It was not the first time that Paul was requested by another team. Helen had often complained about Paul not being committed to team BLUE, but this time she was boiling with anger.

Helen [shouting]: “This is a joke, isn’t it? You always come and go as it suits you and let us do all the work. Don’t you see that we are in this together?”

Paul [annoyed]: “Honestly, I do not think you are the one doing all the work, Helen. At least, it is me who juggles five projects at a time, whereas you have got it nice and easy in your one-team-only setting.”

Paul then turned around and left the room.

This scenario illustrates what I refer to as MTM heterogeneity and define as the deviation in the number of team memberships held by the individuals within a specific unit. I argue that MTM heterogeneity has the potential to create the same kinds of negative dynamics as ascriptive demographic differences. In this way, MTM heterogeneity may undermine what has been described as the raison d’être of MTM: promoting information processing within and knowledge transfer across teams (Bertolotti et al., 2015; O’Leary et al., 2011) as well as enhancing intra-organizational connectivity (O’Leary et al., 2008).

An earlier version of this study has been presented at the 77th AOM Annual Meeting 2017.
Indeed, the large majority of research on MTM points to the relevance of “different points of view, knowledge and information” (Bertolotti et al., 2015, p. 913). In their seminal contribution, O’Leary et al. (2011) build on attention and social network theories in order develop arguments for a curvilinear relationship between (average) number of MTM and performance. This has received empirical support at both the individual (Chan, 2014) and team levels (Bertolotti et al., 2015). Drawing on similar arguments, Cummings and Haas (2012) found the relationship between average number of MTM and team performance to be positive and linear. Despite its major contributions to our understanding of MTM structure, all of this work builds on the critical, yet so far implicit assumption that employees are actually willing to engage in knowledge and resource sharing. What if this was not the case?

As illustrated in the introductory scenario, MTM heterogeneity produces diverse employee work patterns and routines within teams and organizations: while Helen spends her entire day working on team BLUE, Paul is frequently interrupted by one or more of his five projects, thus shifting between different working spheres on a regular basis (González & Mark, 2005). However, past research on organizational routines (e.g., Becker, 2004) demonstrates that shared routines represent an important basis for the development of collective trust and identification. Trust and identification, in turn, have been described as the “glue” of effective networks (Cook, 2005; van Vugt & Hart, 2004). In fact, extant research shows that knowledge sharing is contingent on various motivational factors, such as particularly trust and shared identification (e.g., Wang & Noe, 2010). In light of these findings, I argue that MTM heterogeneity jeopardizes the functioning of MTM structures by undermining the employees’ motivational precondition for engaging in actions of networking and resource sharing. I expect that this has significant implications for the effectiveness of single teams in MTM contexts, but even more so for the “intra-organizational connectivity” (O’Leary et al., 2008, p. 56) of entire organizations. In order to address these propositions theoretically and empirically, I position my paper at the organizational level of analysis.
Past MTM research has made significant progress at the individual and team levels. However, we know relatively little regarding its firm-level effects (e.g., Bertolotti et al., 2015). Related to this, Bell, Brown, and Weiss (2017) point out that there is a clear lack of understanding concerning the effects of team composition on organizational outcomes. Therefore, my aim for the present study is twofold: first, I propose and empirically test a firm-level mechanism that depicts the intra-organizational connectivity arguments raised by earlier research (O’Leary et al., 2008; Söderlund, 2002). Second, I show how MTM heterogeneity interferes with this mechanism. Altogether, this results in the following research questions: (1) do MTM structures lead to an increased intra-organizational connectivity? (2) What are the implications of MTM heterogeneity for intra-organizational connectivity?

In order to address these questions, I review extant work on MTM at the individual and team levels, and explain how studying MTM structure at the organizational level provides valuable insights. Next, I introduce and define MTM level and heterogeneity as two firm-level dimensions of MTM. Drawing on social capital theory (e.g., Adler & Kwon, 2002; Bourdieu, 1986; Leana & van Buren, 1999), I then propose a moderated mediation model that captures my above arguments and links MTM structure to firm performance. Finally, using a sample of 85 firms, I empirically test my model and discuss the results as well as potential implications for theory and practice.

With my study, I make three contributions to existing research. First, I take MTM research to a new level, namely the organization. Thereby, I apply the concepts of MTM level and organizational social capital (Leana & van Buren, 1999), in order to theoretically elaborate the mechanism coined as intra-organizational connectivity (O’Leary et al., 2008). Second, I define and provide evidence for the unit-level construct of MTM heterogeneity, which I believe has significant implications for how we study MTM structures as well as for organizational diversity research. Finally, beyond theoretical contributions, my research includes answers to calls for investigating the conditions and
consequences of MTM at the organizational level (Bertolotti et al., 2015; Mortensen et al., 2007; O’Leary et al., 2011).

In a recent special issue of the Academy of Management Discoveries on the “changing nature of work”, Barley et al. (2017) report that structuring work as (multiple) projects is not limited to single departments or industries anymore, but is actually spreading across all kinds of organizations (e.g., banking, retail, and construction). In this light, I am convinced that work on the firm-level consequences of MTM structure is indispensable. In my study, I show how firms can benefit from an increased connectivity, but also introduce MTM heterogeneity as a major threat for MTM-based organizations: a new type of diversity that is not based on who we are, but how we work.

3.2 Theory

3.2.1 MTM: ten years of research

Ten years ago, Mortensen et al. (2007) set a research agenda for studying the conditions and implications of MTM. Based on exploratory survey and interview data, they suggest that there are a number of challenges and benefits related to MTM at the individual, team, and organizational level. In subsequence, I structure and briefly review the findings of extant research along three categories: theoretical foundations, level of analysis, and dimensions of the phenomenon. Based on this, I point to white spots on the research agenda (Mortensen et al., 2007) and show how the present study aims at enlightening our understanding of MTM.

**Theoretical foundations.** With few exceptions (Maynard et al., 2012; Pluut et al., 2014), the majority of research on MTM highlights the relevance of “different points of view, information and knowledge” (Bertolotti et al., 2015, p. 913). On the one hand, network and knowledge-based theories describe a positive view on MTM. Specifically, it is argued that membership in multiple teams increases the access to various sources of knowledge (Bertolotti et al., 2015; O’Leary et al.,
2011), thus enhancing performance (Borgatti et al., 2009). On the other hand, attention-based theories state that a high number of simultaneous team memberships makes it impossible to attend to and process the high load of information (Bertolotti et al., 2015; Cummings & Haas, 2012; O’Leary et al., 2011), thus decreasing performance (e.g., Ocasio, 1997). In their seminal study, O’Leary et al. (2011) integrate both perspectives and propose a curvilinear (inverted U-shape) relationship between number of MTM and performance at the individual and team levels: at first, individuals and teams benefit from a growing network and multiple sources of information. At a certain threshold, however, processing limitations lead to negative returns of additional team memberships.

**Level of analysis.** Regarding the level of analysis, MTM researchers jointly point to the relevance of addressing the implications and conditions of MTM structure at the individual, team, and organizational levels (Mortensen et al., 2007; O’Leary et al., 2008). Extant empirical research, however, has exclusively focused on the individual and team levels. With regard to single employees, working in multiple teams was found to increase individual performance (Cummings & Haas, 2012), but also lead to higher levels of individual job strain (Pluut et al., 2014). With regard to the team level, studies show that MTM is related to team performance via direct and indirect (i.e., via preparation activities and transactive memory) effects (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012). Furthermore, external advice receiving, average instant messaging use and geographic dispersion were found to be relevant conditions of MTM functioning (Bertolotti et al., 2015; Cummings & Haas, 2012).

**Dimensions of MTM.** In contrast to multitasking (Jett & George, 2003), working in multiple teams does not only include task switching, but also a much “broader set of switches between team contexts” (O’Leary et al., 2011, p. 463). By definition, those team contexts include different tasks, roles, routines, technologies, locations, and so forth, which makes MTM more effortful and ultimately a multidimensional phenomenon (O’Leary et al., 2011). Prior
research has paid much attention to this multidimensionality and hence introduced several dimensions of MTM: O’Leary et al. (2011) distinguish between number and variety as two distinct dimensions. Another dimension that has received considerable research attention is the percentage of time spent on a focal team (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012). Related to this, Pluut et al. (2014) propose using an index referred to as fragmentation of time that integrates both, the number of MTM and the percentage of time spent in the respective teams. Finally, Mortensen (2014, p. 911) investigates the antecedents and effects of membership model divergence, a dimension of MTM which he defines as “the misalignment of team members’ models of who are – and who are not – team members [italics removed]”.

Although I do not claim my brief review to be fully comprehensive, it gives a good idea of the main interests of prior research. Moreover, it points to white spots on our research agenda (Mortensen et al., 2007). In particular, I want to stress two aspects, as they represent both my motivation for and the focus of the present study: first, prior research clearly demonstrates that, although the (average) number of teams plays a crucial role in understanding the implications of MTM, a mere focus on this dimension only tells half the story. To date, I believe that the list of dimensions, which need to be considered when studying MTM, is by far not exhaustive.

Second, except for conceptual work by O’Leary et al. (2008), organizational-level research on MTM is non-existent. This is both unfortunate and surprising for several reasons: on the one hand, the adoption of MTM structure is not driven by individuals or teams, but based on “organizational decisions” (O’Leary et al., 2011, p. 472) which are targeted towards reaching organizational goals (Bell et al., 2017). For example, Söderlund (2015) argues that organizations decide to structure work as multiple projects (or teams), in order to create more dynamic organizations, shake up traditional rigid structures, and drive innovation. Furthermore, organizations “may be driven by a managerial focus on utilization and flexible resource deployment” (O’Leary et al., 2011, p. 472). In that sense, MTM is not limited to single individuals or teams, but is
introduced as a structural intervention within departments (e.g., R&D departments; Bertolotti et al., 2015) or entire organizations (Barley et al., 2017). Whether this is globally worthwhile for a firm or not, has not been addressed empirically so far.

On the other hand, prior research points out that MTM yields distinct effects at the various levels of analysis, including the organization. As O’Leary et al. (2008) note, organizational-level effects are primarily driven by the resulting network of interconnected teams, which help to establish links between different parts of the organization. Thereby, the ultimate goal lies in the creation of “multi-coupled project organizations” (Söderlund, 2002, p. 428), which are characterized by mutual support and knowledge sharing (Bertolotti et al., 2015). In other words, it is assumed that using MTM can create an advantage for organizations through an increased intra-organizational connectivity (O’Leary et al., 2008; Söderlund, 2015). This increased connectivity is obviously not bound within the teams themselves (O’Leary et al., 2008), but has positive implications for the entire organization beyond simple aggregation of lower level effects. As such, the organization itself becomes a dynamic network of multiple teams (Bell et al., 2017). In consequence, organizations may benefit from higher levels of resource utilization, reduced redundancy in activities, built-in boundary spanning capacities, faster access to expert knowledge via a denser network of relationships, increased flexibility, and natural selection of successful projects (Bell et al., 2017; Mortensen et al., 2007; O’Leary et al., 2008).

In the following paragraphs, I refer to organizational social capital theory (Adler & Kwon, 2002; Bourdieu, 1986; Leana & van Buren, 1999) in order to theoretically establish the firm-level process referred to as intra-organizational connectivity (O’Leary et al., 2008). Specifically, I show how high MTM levels increase organizational social capital and ultimately performance. Subsequently, I call into question two core assumptions of this model, and elaborate on the role of MTM heterogeneity.
3.2.2  Intra-organizational connectivity: a social-capital-based mechanism

To establish the relationship between MTM level, organizational social capital and firm performance, I first briefly explain the construct of MTM level and discuss the boundaries of my model. Then, I elaborate on the relationships between MTM level and organizational social capital, and between organizational social capital and firm performance, respectively.

MTM level: definition and mechanism. As summarized above, the majority of prior research on MTM has dealt with the (average) number of team memberships. This is not surprising, because the number of team memberships represents the very heart of the phenomenon and describes the extent to which employees or teams are actually involved in MTM. Similarly, I introduce the concept of MTM level in my firm-level model. MTM level is defined as a unit-level construct that provides information on the intensity of an organization’s use of MTM structures and is operationalized as the median\(^\text{11}\) number of team memberships held by the employees within an organization.

In order to identify the theoretical mechanism leading from MTM level to firm performance, it is worthwhile to take work at the individual and team levels into account. As a common factor, all of this research points to the relevance of information and knowledge in MTM settings (Bertolotti et al., 2015). Although I acknowledge the crucial role of knowledge sharing in contemporary forms of collaboration, such as MTM, I believe that an exclusive focus on information and knowledge is too narrow. Thus, I build my model on social capital theory and thereby hope to open up new vistas for MTM research. Particularly, fundamental work by Bourdieu (1986) elicits a reconsideration of the exclusive focus on the creation and dissemination of knowledge in MTM theorizing. Based on Bourdieu’s (1986) notion of social capital, I argue that membership in multiple groups does not only provide access to various sources of knowledge (Oh, Labianca, & Chung, 2006), but to all of the “actual or potential resources”

\(^{11}\) We use the median, rather than mean, for conceptual and statistical reasons. Those are discussed in chapter 3.3.2.
available through collaboration (Bourdieu, 1986, p. 247). This includes social resources (e.g., social support), goods and service resources (e.g., tools and equipment), temporal resources, political resources (e.g., status and power), and informational resources (cf. Bakker & Schaufeli, 2008; Bourdieu, 1986; Foa & Foa, 1974; Nahapiet & Ghoshal, 1998; Oh et al., 2006; Omilion-Hodges & Baker, 2013; Seers, Wilkerson, & Grubb, 2006).

MTM level, organizational social capital and performance. I build my argumentation on the organizational model of social capital by Leana and van Buren (1999). As I discuss below, I hold that this model is capable of grasping the intra-organizational connectivity arguments raised by prior research on MTM (O’Leary et al., 2008). Leana and van Buren (1999) highlight employment practices as a primary mechanism by which management can enhance the employees’ willingness and ability to engage in collective action, and thus create a competitive advantage. They establish the relationship between employment practices and organizational outcomes by referring to the concept of organizational social capital, which is defined as “a resource reflecting the character of social relations within the organization”, realized through members’ shared trust or identity and collective action (Leana & van Buren, 1999, p. 540). This definition corresponds strongly with what O’Leary et al. (2008) refer to as intra-organizational connectivity. More precisely, if reflects the bonding view on social capital (Adler & Kwon, 2002), which focuses on the linkages among individuals or groups within a collectivity. Thereby, it addresses the features that contribute to collective cohesiveness and facilitate the pursuit of shared goals (Adler & Kwon, 2002).

I argue that the use of MTM structures also represents a kind of employment practice, which shapes the collaboration routines within an organization and thereby guides collective action. In particular, since working in a higher number of teams increases the number of co-worker relationships and contacts within an organization (O’Leary et al., 2011), MTM structures can help to turn potential into mobilized resources (Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998). With regard to actively increasing the employees’ willingness to share resources (Oh
et al., 2006), Leana and van Buren (1999) point to the critical role of shared identification and trust. That is, if people successfully complete a project, they are likely to exhibit higher levels of trust and identification, which enables them to collaborate on more complex projects in the future (Leana & van Buren, 1999). In this vein, Mortensen (2014) argues that working together in one or multiple teams and experiencing patterns of collaboration fosters perceptions of identified and emergent membership, and thus contributes to shared identity just as much as formal team assignments. Bell et al. (2017) note that, although teams may be temporary, the relational ties between employees will survive even after reconfiguration of teams. In that sense, collaboration in MTM systems is not solely based on team membership, but represents a function of expertise, accessibility, trust, and previous interactions (Bell et al., 2017). I therefore conclude that the more teams an individual is assigned to, the more co-workers he is likely to bond with and the more resources he is likely to be able to share or mobilize now and in the future.

Yet, who is the beneficiary of the social capital created? According to Leana and van Buren (1999), social capital is jointly owned by the organization (public good) and its members (private good). In consequence, the benefits and the value of organizational social capital accrue to both, the organization and the employees. Although I acknowledge this joint ownership, my model focuses more on the public goods aspect of social capital (e.g., Coleman, 1990), which is conceptually situated at the macro level (Leana & van Buren, 1999) and refers to social capital as an attribute of a social unit, rather than an individual actor (Coleman, 1990). Following this, I propose that MTM structure does not only increase the network of single employees, but primarily fosters intra-organizational connectivity (i.e. organizationally-owned social capital) (O’Leary et al., 2008). In terms of social capital theory, this enables individuals to “operate as a collective because of general understandings of work organization, implicit norms, and generalized, resilient trust” (Leana & van Buren, 1999, p. 549). In more concrete terms, organizations using MTM structures benefit from higher levels of resource utilization and reduced redundancy in activities, as information on
potential resources flows more fluidly into its various parts (O’Leary et al., 2008). Based on this, I posit that higher MTM levels are associated with higher levels of organizational social capital. This results in the following hypothesis:

**Hypothesis 1. MTM level is positively related to organizational social capital.**

Prior research has widely acknowledged the positive relationship between social capital and performance at all levels of analysis (Payne, Moore, Griffis, & Autry, 2011). Drawing on this, my model states that higher levels of organizational social capital lead to increases in firm performance. This proposition has been tested and supported in extant literature using various measures of performance (e.g., Westlund & Adam, 2010). Therefore, I derive the following hypothesis:

**Hypothesis 2. Organizational social capital is positively related to firm performance relative to the firm’s industry.**

### 3.2.3 MTM heterogeneity: diversity in the number of team memberships

Before I continue my argumentation, it is important to consider two critical assumptions underlying my social capital-based model, which I have not addressed explicitly so far. First, my model assumes that employees are actually willing to actively engage in resource sharing. As demonstrated by work on the motivational preconditions for sharing resources, however, this need not always be the case (Palmisano, 2008; Wang & Noe, 2010). Drawing on social exchange (Emerson, 1976) and identity (Tajfel & Turner, 1985) theories, prior research has identified trust and identification as important requirements for employees to engage in the exchange of resources (Palmisano, 2008; Wang & Noe, 2010). In that sense, both trust (Cook, 2005) and identification (van Vugt & Hart, 2004) have been described as the glue of effective networks and, in consequence, can also be considered as important building blocks of intra-organizational connectivity.
Second, I have assumed that MTM structures change the collaboration patterns of all employees, such that they collaborate with a higher number of co-workers (O’Leary et al., 2011), resulting in superior collaboration routines and higher levels of organizational social capital (Leana & van Buren, 1999). However, I believe that it is critical to assume that all employees are affected by MTM structures to the same extent. That is, while some employees work in 5, 10 or even more teams, others might remain in a single team. From the perspective of organizational decision-makers, there are several motives for creating diversity in the number of team memberships within an organization. For example, some individuals may be more suited for working in multiple teams due to their organizational and social skills as well as other characteristics related to multitasking or time allocation (O’Leary et al., 2011). Moreover, scarcity of specific competencies (Mathieu et al., 2008), access to intra-organizational networks (e.g., Ancona & Caldwell, 1992), individual development programs (e.g., Watkins & Marsick, 1993) or reasons of utilization and flexible resource deployment (O’Leary et al., 2011) may induce organizations to assign employees to considerably differing numbers of teams.

If both assumptions are set aside, we account for the possibility of MTM heterogeneity. This, in turn, may undermine the employees’ willingness to share resources, and thus lead to reduced levels of intra-organizational connectivity.

**MTM heterogeneity: definition and mechanism.** I define MTM heterogeneity as the deviation in the number of team memberships held by the individuals within a specific unit, such as an organization, a department or a team. I draw on Harrison and Klein’s (2007, p. 1203) work to conceptualize MTM heterogeneity as a form of diversity capturing the extent to which “within units, members differ from one another in their position along a single continuous attribute”. This type of diversity is referred to as separation and typically has symmetric effects. Based on this, Harrison and Klein (2007) propose using indices like standard deviation (SD) or mean Euclidean distance, which gauge the symmetric nature of separation. Having defined the construct of MTM
heterogeneity, I now situate it relative to existing frameworks of diversity research.

In prior diversity research, various bipolar taxonomies have been presented, such as high versus low visibility and high versus low job-relatedness (Pelled, 1996), surface-level versus deep-level diversity (Harrison, Price, & Bell, 1998), or task-related versus relations-oriented diversity (Jackson, Joshi, & Erhardt, 2003). However, I hold that those categorizations are not capable of grasping the specific nature of MTM heterogeneity. In search for a more suitable categorization, I draw on work by Reskin (2003) and propose a new taxonomy for diversity research, which helps to classify MTM heterogeneity and other types of diversity in contemporary forms of work and collaboration. Reskin (2003) posits that organizational actions, which cause visible differences between employees, can create work group dynamics comparable to those of ascriptive demographic differences. Following this, Broschak and Davis-Blake (2006) note that much of extant diversity research has documented the effects of salient and observable differences that employees bring to work (i.e., race, gender, age, and functional background), but has ignored that organizational employment practices can produce heterogeneity that employees obtain at work. In consequence, those employment practices can have the same kinds of (negative) effects as ascriptive diversity, “although directed toward entirely different goals” (Reskin, 2003, p. 4). While classic research was almost exclusively concerned with brought-to-work diversity (‘who we are’), I believe that an increasing heterogeneity in how people work and collaborate urges us to put a spotlight on obtained-at-work diversity (‘how we work’). Broschak and Davis-Blake (2006) have taken first steps towards empirically investigating this new kind of diversity and found that heterogeneity in standard and nonstandard work arrangements (i.e., temporary and part-time work) negatively affects supervisor and co-worker relationships, as well as willingness to assist others.

This leads us to the question: why does MTM heterogeneity matter? I argue that MTM heterogeneity has the potential to create the same kinds of negative effects
as Broschak and Davis-Blake (2006) found in their study on temporary and part-time work. There are several reasons to assume that MTM heterogeneity is visible among co-workers. For example, employees working in a greater number of teams will have less presence time in each of their teams (Cummings & Haas, 2012; Maynard et al., 2012), they will be interrupted more frequently by other projects (González & Mark, 2005), and they will be harder to reach due to busy schedules (e.g. Mortensen et al., 2007). As a consequence, I posit that MTM heterogeneity has the potential to evoke diversity-like mechanisms leading to reduced communication, cooperation, and resource sharing among co-workers (Jackson et al., 2003; van Knippenberg & Schippers, 2007; Williams & O’Reilly, 1998). Since those effects heavily contradict organizational motives, such as increasing intra-organizational collaboration (e.g., Bertolotti et al., 2015; Mortensen et al., 2007), MTM structures may turn out to be a Trojan horse for organizations. In order to substantiate this proposition with deeper theoretical grounding, I refer to research on organizational routines and patterns of work.

The moderating role of MTM heterogeneity. Salvato and Rerup (2011) highlight the crucial role of emotions in research on routines and capabilities, without which we might be left “with a restricted and misleading understanding of how work is accomplished in organizations” (p. 13). In particular, prior research shows that shared organizational routines represent an important basis for collective identification (e.g., Becker, 2004). That is, organizational-level routines serve as an explicit basis for linkages of employees and as cues for the creation of a shared reality (Wiesenfeld, Raghuram, & Garud, 1999). Thereby, shared individual patterns of collaboration are interpreted within a shared culture (Harquail & King, 2010), and consequently become a shared source of reference for what “members identif[y] as typical” in an organization (Dutton & Dukerich, 1991, p. 546). According to Harquail and King (2010), employees do not only cooperate based on specific routines, but also recognize and communicate how they experience a situation. Hancock (2008) describes this process of recognition and communication not as simply intellectual, but rather as fully embodied and emotionally loaded. In that sense, shared routines
emotionally shape a sharable sense of collective organizational identification (Harquail & King, 2010). Following this, I acknowledge that a certain degree of homogeneity in work patterns represents a prerequisite for the development of effective organizational routines.

Coming back to MTM structures, I argue that high levels of MTM heterogeneity cause heterogeneity in individual work and collaboration patterns, and thus hinder the development of shared organizational identification and trust. However, as described in my social-capital based model, shared identification and trust represent central motivational preconditions for employees to engage in resource sharing and the creation of organizational social capital (Kwon & Adler, 2014; Nahapiet & Ghoshal, 1998; Oh et al., 2006). Similarly, Mortensen et al. (2007) state that trust and identification are important in all teams, but particularly in MTM contexts. In this way, high levels of heterogeneity may undermine the initially positive effects of MTM level. In his study on membership model divergence, Mortensen (2014) also points to the critical role of shared experiences, such as working through the night to meet a critical deadline, as a basis for identification and perceived membership. Thus, I conclude that the effectiveness of MTM level is contingent on the levels of heterogeneity within an organization.

**Hypothesis 3.** MTM heterogeneity moderates the relationship between MTM level and organizational social capital; specifically, at high levels of MTM heterogeneity, the initially positive relationship between MTM level and organizational social capital turns insignificant.

With regard to hypotheses 1 to 3, a moderated mediation model is proposed (Preacher et al., 2007). These relationships are reflected in my overall theoretical model, illustrated in Figure 9. Although hypotheses 1 to 3 may be examined by testing the significance of individual paths in the model, research indicates that testing individual paths is insufficient for establishing moderated mediation
effects (Hayes & Preacher, 2010). Therefore, I provide a final hypothesis which specifies the overall moderated mediation effect predicted in my model.

_Hypothesis 4. MTM level is related to firm performance via conditional indirect effects, such that its relationship with firm performance is moderated by MTM heterogeneity and mediated by organizational social capital._

![Diagram](image.png)

_Figure 9. Conceptual model and data sources (study 2)_

*Note. MTM = multiple team membership. HR = human resources. TMT = top-management team. Box frames represent the respective data sources (cf. upper right corner).*

### 3.3 Methods

#### 3.3.1 Sample

For this study, I collected data in German small and medium-sized companies between March and June 2015. Overall, 90 companies applied voluntarily to participate in the research project that was part of a larger benchmarking study in cooperation with a professional agency from Germany. Due to dropouts the final sample comprised 85 firms, reflecting an organizational response rate of 94 percent. Participating companies came from different types of industries (42.4 percent = service; 31.8 percent = production; 9.4 percent = wholesale; 9.4 percent = retail; 7.1 percent = finance) and varied in size from 10 to 4,900
employees\textsuperscript{12} (median = 186). To circumvent concerns of a common method bias, I obtained data from three different sources: an employee survey, a top-management survey, and a survey of the head of HR.

First, all employees were invited to the study. Overall, 16,030 of the invited employees participated and were asked to provide demographic and general vocational information. To limit the amount of questions each employee had to answer for the overall benchmarking report, employees were randomly assigned to one of four different versions of the employee survey. With regard to this study, questions on the number of team memberships were answered by all employees, whereas only one of the four surveys contained the items for organizational social capital. Thus, this scale was answered by randomly selected 25 percent of the employees from each company. On average, the participating employees were 40 years old, had been with their company for 8 years, and were mostly male (61 percent). Second, I asked the members of the TMT to assess firm performance. Overall, 477 executives participated in the study, ranging from 2 to 11 participants per company. Finally, the head of HR from each company was also asked about his evaluation of company performance and about a set of control variables, such as company characteristics.

3.3.2 Measures

All questionnaires were administered in German. I used a double-blind back-translation procedure to ensure content similarity with the English scales (Brislin, 1986). For the hypotheses tests, the level of analysis was a single organizational-level model. Hence, I calculated intra-class correlation coefficients ($\text{ICC}_1$ and $\text{ICC}_2$) and the average deviation index ($\text{AD}_{M/J}$).

**MTM level.** In line with prior research (Bertolotti et al., 2015; Cummings & Haas, 2012; Mortensen, 2014; O’Leary et al., 2011), I asked all employees to

\textsuperscript{12} We conducted robustness checks by excluding the smallest and the largest firms from our sample. This did not change the results.
indicate their average number of team memberships during the past six months. In order to obtain the MTM level per organization, I used the median of the employees’ team memberships. I chose the median over the mean for several reasons: first, with the introduction of MTM heterogeneity, my model is based on the premise that the number of MTM varies considerably within organizations. Therefore, within-group agreement is not expected (cf. Henderson, Liden, Glibkowski, & Chaudhry, 2009). In such cases, the mean is not considered as an appropriate measure of aggregation (Liden, Erdogan, Wayne, & Sparrowe, 2006). Rather, Bliese (2000) advises to use the median. Second, the median is more robust against outliers (cf. Henderson et al., 2009). Finally, there is an “artefactual overlap” between mean and standard deviation, leading to high correlations between the two constructs (Harrison & Klein, 2007, p. 1214). Since I apply standard deviation as a measure of MTM heterogeneity, this may lead to severe multicollinearity issues. In all, I consider the median as a more appropriate measure for both theoretical and methodological reasons.

**MTM heterogeneity.** The calculation of MTM heterogeneity was also based on the employees’ reported number of team memberships. In reference to Harrison and Klein (2007), I conceptualize heterogeneity in the number of team memberships as separation, which captures the extent to which “within units, members differ from one another in their position along a single continuous attribute” (p. 1203). Given that “there is no particular advantage” of using either SD or mean Euclidean distance for assessing separation, I decided to apply SD for reasons of “researcher familiarity” (p. 1211). Hence, in order to obtain the level of MTM heterogeneity for each company, I calculated the SD of the number of team memberships of all employees within an organization.

**Organizational social capital.** The employees were asked to assess the levels of organizational social capital in their firms. Following Adler and Kwon’s (2002) recommendation, my choice of an adequate measurement was guided by the type of social capital captured in my study. Due to the model’s focus on the bonding nature of social capital, I used the 4-item measure developed by Carmeli, Ben-Hador, Waldman, and Rupp (2009) (sample item: ‘To which extent
do you get help from your colleagues at work?’). Furthermore, one very similar item from Jetten, Haslam, and Haslam’s (2012) co-worker support scale (‘To which extent do you get the resources you need at work from your colleagues?’) was added, in order to better reflect the resource sharing notion of my model. Employees indicated their assessment on a five-point response scale (1=’not at all’; 5=’to a large extent’). A confirmatory factor analysis (CFA) showed that all items loaded on a single factor and exhibited good model fit properties (CFI = 1.000; TLI = 1.026; SRMR = .005). The use of a direct-consensus composition model was justified by the aggregation statistics, which yielded good results (ICC₁ = .033, ICC₂ = .600, p < .001, AD<sub>M/J</sub> = .693). The internal consistency estimate was α = .94.

**Firm performance.** To capture firm performance, I followed Combs, Crook, and Shook’s (2005) suggestion to differentiate between operational and organizational performance. In order to receive a broadly supported and reliable evaluation of both performance dimensions, I asked both the TMTs and the HR representatives to assess two items on organizational performance (i.e., overall firm performance and company growth) and two on operational performance (i.e., efficiency of business procedures and employee retention). In line with prior studies (e.g., Rogers & Wright, 1998), the perceptual measures were benchmarked in the sense that I asked key informants to assess firm performance relative to the performance of their industry rivals on a 7-point response scale (1=’much worse’; 7=’much better’). Although I am aware that forward-looking stock measures would be the most desirable source to evaluate performance, I believe that the chosen measure very well fits my theoretical argumentation of social capital-based advantage (Nahapiet & Ghoshal, 1998). In addition, empirical research has shown the validity of subjective measures and thus provides support for their application to the measurement of organizational and operational performance (Böhm, Kunze, & Bruch, 2014; Kunze et al., 2013, 2011; RoI & Morrow, 1999; Wall et al., 2004). As in previous research (Kunze et al., 2013), I assumed that all four performance items load on one common performance factor. The single factor solution was supported by a
CFA showing good overall fit properties (CFI = .980; TLI = .939; SRMR = .034). Furthermore, aggregation statistics strongly supported an aggregation to the firm-level (ICC$_1$ = .435, ICC$_2$ = .720, p < .001, AD$_{M(I)}$ = .459). The internal consistency estimate was $\alpha = .82$.

**Control variables.** Finally, I included several control variables into my analysis. Thereby, I hope to account for omitted variable bias and limit the risk of endogeneity. With respect to my research model, I asked the employees to assess a set of variables that characterize the collaboration structure within their organization. First, I follow the suggestion by O’Leary et al. (2011, p. 464) who point to the relevance of closely considering the temporal structure of the research setting in “any empirical study of [MTM]”. Thus, I included the average working time as a control variable. As in prior research (O’Leary et al., 2011), my model is based on the premise that working in more teams does not include working longer hours. Rather, I assume that time is finite and individuals have to reduce the time dedicated to any one team when joining multiple teams. In order to capture the average working time per organization, I asked all employees to indicate their usual weekly working hours and mean aggregated this information.

Second, the average temporal stability of team memberships for each organization was included. Prior research (e.g., Bakker, Leenders, Gabbay, Kratzer, & van Engelen, 2006; Sawng, Kim, & Han, 2006) demonstrates that the longer a team has worked together, the more likely its members will develop cohesiveness and engage in knowledge sharing. This has significant implications for the development of social capital within an organization and the mechanism described in my conceptual model. Thus, I used one item (‘The team members usually remain on a team over a long period of time.’) of Slotegraaf and Atuahene-Gima’s (2011) temporal stability scale and asked the employees to indicate their agreement on a five-point response scale (1=’do not agree’; 5=’strongly agree’).
Third, I included the number of subsidiaries of the firms as a control variable. I use this as a proxy measure for the geographic dispersion of work. Whereas in one-subsidiary firms, employees are more likely to communicate face-to-face, with an increasing number of subsidiaries, the relevance of technology-mediated communication gains in importance. The degree of virtuality has been described as a central boundary condition in modern organizations (Gilson et al., 2015; Kirkman & Mathieu, 2005) and in social capital research (Kwon & Adler, 2014). Furthermore, it has been shown to influence the MTM-performance link at the team level (Cummings & Haas, 2012).

In addition to collaboration structure, I accounted for firm characteristics, such as firm size and five classes of industry affiliation (i.e., production, wholesale, retail, service, and finance). The literature on social capital suggests including information about firm size and industry as control variables (e.g., McEvily & Zaheer, 1999), because they can be considered as proxies for a firm’s resources that may affect its performance (e.g., Pierce & Gardner, 2004).

### 3.4 Results

#### 3.4.1 Descriptive statistics

Means, SDs, and intercorrelations among the study variables are presented in Table 7. At the individual level, the average number of MTM in my sample was 2.29 ($SD = 2.16$), with a minimum of 1 and a maximum of 12 team memberships. This is comparable to prior research on MTM (e.g., Mortensen, 2014; Pluut et al., 2014). With regard to the organizational level, MTM level ranged between 1 and 5 ($mean = 1.57; SD = 1.08$). Furthermore, MTM heterogeneity appears to be quite relevant in my sample ($mean = 2.13; SD = .64$).
### Table 7. Means, standard deviations, and correlations (study 2)

| Variables                           | Mean   | SD    | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  |
|-------------------------------------|--------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Firm size                        | 343.65 | 598.74| 1   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2. Industry: production             | .32    | .47   | -.17| 1   |    |    |    |    |    |    |    |    |    |    |    |    |
| 3. Industry: wholesale              | .09    | .29   | .02 | -.22*| 1   |    |    |    |    |    |    |    |    |    |    |    |
| 4. Industry: retail                 | .09    | .29   | .31**| -.22*| -.10| 1   |    |    |    |    |    |    |    |    |    |    |
| 5. Industry: service                | .42    | .50   | -.10| -.59**| -.28*| -.28*| 1   |    |    |    |    |    |    |    |    |    |
| 6. Industry: finance                | .07    | .26   | .12 | -.19| -.09| -.09| -.24*| 1   |    |    |    |    |    |    |    |    |
| 7. Avg. working hours               | 40.85  | 2.63  | -.19| .03 | .20 | -.32**| .12 | -.15| 1   |    |    |    |    |    |    |    |
| 8. Avg. stability of team memberships | 3.63   | .26   | .01 | -.05| .10 | -.07| .05 | -.04| -.13| 1   |    |    |    |    |    |    |
| 9. No. of subsidiaries              | 7.16   | 14.76 | .71**| -.24*| .04 | .44**| -.07| .03 | -.13| .02 | 1   |    |    |    |    |    |
| 10. MTM level                       | 1.57   | 1.08  | -.18| -.06| -.02| -.17| .24*| -.15| .36**| -.19| -.14| 1   |    |    |    |    |
| 11. MTM heterogeneity               | 2.13   | .64   | -.23*| .23*| -.14| -.26*| .02 | -.01| .11 | -.28*| -.34**| .36**| 1   |    |    |
| 12. Org. social capital             | 4.01   | .25   | .05 | -.19| .16 | .12 | -.02 | .06 | -.21| .18 | .07 | -.02 | -.39**| 1 |    |
| 13. Firm performance                | 5.53   | .72   | .03 | .10 | .10 | .04 | .01 | .00 | .11 | .29**| .11 | -.12 | -.31**| -.33**| 1  |

**Note.** N=85 organizations (16,030 employees, 85 HR representatives, 477 top managers). MTM = multiple team membership.

* p < .05. ** p < .01.
It is interesting to note that MTM level is significantly correlated \( (r = .24) \) with the service industry dummy, indicating that MTM is more prominent among companies from the service sector within my sample. Contrarily, MTM heterogeneity plays a larger role in the production industry \( (r = .23) \). Finally, a significant correlation between MTM level and average working hours \( (r = .36) \) contradicts the assumption that working in multiple teams does not lead to increases in working time (cf. O’Leary et al., 2011). This supports including the average working time as a control variable.

### 3.4.2 Hypotheses testing

First, I investigated the individual path hypotheses 1 to 3 based on linear multiple regression models. Hypothesis 1 predicts a positive relationship between MTM level and organizational social capital. In order to test this hypothesis, I first ran a controls-only model and then included MTM level and separation into the model of organizational social capital (cf. Table 8). As predicted, MTM level has a positive effect on organizational social capital.

In order to investigate the moderation effect formalized in hypothesis 3, I additionally included the interaction of MTM level and heterogeneity into the mediator variable model. Table 8 shows that the interaction term has a significant negative effect, thus supporting a moderation of the relationship between MTM level and organizational social capital. In order to better assess the nature of the moderation, I plotted the interaction effect (cf. Figure 10). As predicted in hypothesis 3, simple slopes tests show that the relationship between MTM level and organizational social capital is only significant \( (p = .002) \) at low levels of MTM heterogeneity \((- 1 \, SD)\). At high levels \((+1 \, SD)\), it is insignificant \( (p = .290) \).

Next, I investigated the dependent variable (i.e. firm performance) model. Hypothesis 2 states that organizational social capital is positively related to firm performance relative to a firm’s industry. To test this, I first included my set of control variables and MTM level into the model of firm performance and then
added organizational social capital (cf. Table 8). I find a positive and significant relationship between organizational social capital and firm performance relative to a firm’s industry, thus lending support to hypothesis 2.

Table 8. Results of regression analyses (study 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organizational social capital</th>
<th>Firm performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>-.05</td>
<td>-.03</td>
</tr>
<tr>
<td>Industry dummy: wholesale</td>
<td>.24*</td>
<td>.18</td>
</tr>
<tr>
<td>Industry dummy: retail</td>
<td>.15</td>
<td>.06</td>
</tr>
<tr>
<td>Industry dummy: service</td>
<td>.13</td>
<td>.04</td>
</tr>
<tr>
<td>Industry dummy: finance</td>
<td>.11</td>
<td>.09</td>
</tr>
<tr>
<td>Avg. working hours</td>
<td>-.20</td>
<td>-.27**</td>
</tr>
<tr>
<td>Avg. stability of membership</td>
<td>.14</td>
<td>.06</td>
</tr>
<tr>
<td>Number of subsidiaries</td>
<td>.01</td>
<td>-.09</td>
</tr>
<tr>
<td>Predictor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level</td>
<td>.24*</td>
<td>.41**</td>
</tr>
<tr>
<td>MTM heterogeneity</td>
<td>-.43**</td>
<td>-.45***</td>
</tr>
<tr>
<td>Moderator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level × MTM heterogeneity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mediator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational social capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ $R^2$</td>
<td>.13**</td>
<td>.05*</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.13</td>
<td>.26</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.04</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note. Variables were mean-centered prior to analysis. Standardized beta coefficients are reported. Statistical tests are based on two-tailed tests. MTM = multiple team membership.
Finally, I investigated the significance of the conditional indirect effects identified in hypothesis 4. Testing this moderated mediation hypothesis requires examining the existence of overall conditional indirect effects (Preacher et al., 2007). In line with prior research (Eisenbeiss et al., 2008), two approaches for assessing the significance of the conditional indirect effects were used (cf. Table 9). First, I applied normal theory tests (Preacher et al., 2007) of the indirect effect of MTM level on firm performance at low (-1 SD), mean, and high (+1 SD) levels of the moderator (MTM heterogeneity). The results indicate that MTM level exerts a significant and positive indirect effect on firm performance at low and mean levels of heterogeneity (cf. Table 9). Second, I used bootstrapping (5,000 bootstrap samples) in order to generate 95% confidence intervals for the magnitude of the indirect effects and assess significance via these confidence intervals. Since only the confidence interval for high levels of
the moderator includes zero, this lends further support to a significant indirect effect (cf. Table 9). In sum, both the normal theory and confidence interval tests provide support for the moderated mediation model presented in Figure 9 and formalized in hypothesis 4. I therefore conclude that MTM level is linked to firm performance via conditional indirect effects.

Table 9. Bootstrapping of conditional indirect effects (study 2)

<table>
<thead>
<tr>
<th>Values of MTM heterogeneity</th>
<th>Conditional indirect effects</th>
<th>SE</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1 SD (.64)</td>
<td>.15 *</td>
<td>.09</td>
<td>.01</td>
<td>.35</td>
</tr>
<tr>
<td>Mean (.00)</td>
<td>.09 *</td>
<td>.05</td>
<td>.02</td>
<td>.21</td>
</tr>
<tr>
<td>+1 SD (.64)</td>
<td>.03</td>
<td>.03</td>
<td>-0.02</td>
<td>.11</td>
</tr>
</tbody>
</table>

Note. Variables were mean-centered prior to analysis. Results are based on 5,000 bootstrap samples. Conditional indirect effect tests are two-tailed. MTM = multiple team membership. * p < .05.

In all, the results strongly support my conceptual model. First, they reveal that the positive relationship between MTM level and organizational social capital is contingent on MTM heterogeneity. Second, there is a positive relationship between organizational social capital and firm performance relative to a firm’s industry. Finally, the results also confirm the existence of a conditional indirect effect of MTM level on firm performance in my sample.

3.5 Discussion

The goal of my study was to gain more insights into the firm-level dimensionality and consequences of MTM. Drawing on social capital theory (Leana & van Buren, 1999), I examined the effects of two firm-level dimensions of MTM (i.e., level and heterogeneity) on organizational social capital and firm performance. In line with my conceptual model, I found that the development of organizational social capital (O’Leary et al., 2008) is contingent on MTM
heterogeneity. Specifically, at high levels of MTM heterogeneity, the positive effect of MTM level on organizational social capital and firm performance turns insignificant. I believe that my work has several intriguing implications for theory and practice.

3.5.1 Theoretical implications

The present paper particularly contributes to two areas of research, namely MTM and organizational diversity. The main implications are discussed within the paragraphs below.

MTM research. To the best of my knowledge, the present study is the first to explicitly address the dimensionality and consequences of MTM structure at the firm-level. I believe that this has important implications for the field of MTM research. First, my work provides a theoretical foundation and empirical support to what prior research has described as ‘intra-organizational connectivity’. Specifically, firms may benefit from higher levels of resource utilization, reduced redundancy in activities, built-in boundary spanning capacities, and faster access to expert knowledge (Mortensen et al., 2007; O’Leary et al., 2008; O’Leary et al., 2011). This demonstrates that the consequences of MTM are not limited to the individual or team levels, but entire organizations can benefit from MTM structures beyond simple aggregation of lower level effects. As such, MTM is not solely worthwhile for individual or team performance, but represents an effective way of structuring work in entire organizations, if side effects such as MTM heterogeneity are controlled.

Second, with organizational social capital theory I introduce a new perspective to the field of MTM research, which allows us to consider resources that go beyond knowledge and information (Bourdieu, 1986), such as political, social or temporal resources (e.g., Oh et al., 2006). Furthermore, social capital theory has been described as highly suited for research on multiple levels of analysis (Payne et al., 2011). Since MTM has been described as a multilevel phenomenon from early on (Mortensen et al., 2007), I argue that future research can strongly
benefit from a theoretical perspective that allows for an integration of individual, team and firm-level concepts.

Third, my model of MTM level and heterogeneity reinforces the acknowledged multidimensionality of MTM structures (e.g., O’Leary et al., 2011). Thereby, I extend prior research in two ways: on the one hand, I shed light on the dimensionality of MTM at the firm-level. On the other hand, my study is the first to consider the interrelation of two dimensions of MTM. I suggest that future research on all levels of analysis may strongly benefit from considering the various facets of MTM not as unrelated phenomena, but as inevitably interrelated. At the individual level, for example, it may be more or less demanding to work in multiple teams depending on how different the respective teams are, how often individuals have to switch between team contexts, or how fluid membership is designed. At the team level, the positive effects of MTM are likely to be affected by the levels of MTM heterogeneity within a focal team. Therefore, I encourage future research to take the possibility of interaction effects among the various facets of MTM into consideration.

Organizational diversity research. With respect to the field of organizational diversity, I hope that my work stimulates further research on employee heterogeneity that is caused by organizational actions (Reskin, 2003). Specifically, I elaborated on the distinction between brought-to-work and obtained-at-work diversity. Although similar arguments have been raised in Broschak and Davis-Blake’s (2006) study on part-time and temporary work, I believe that my paper contributes to this ‘new kind of diversity’ in a decisive way: whereas Broschak and Davis-Blake (2006) rather focus on surface-level differences between standard and nonstandard workers, such as specifically colored uniforms, hardhats, or identification badges, I argue that heterogeneity in collaboration patterns and routines can have similarly negative effects. Therefore, my work concerns rather deep-level dimensions of obtained-at-work diversity. Regarding the obvious increase in more flexible forms of collaboration (Wageman et al., 2012), I believe that diversity in how we work will become an important issue for firms. Thus, I suggest that future research investigates the
conditions and consequences of heterogeneity in forms of collaboration, such as and beyond MTM (e.g., virtual versus face-to-face, fluid versus stable, home-based versus office-based).

3.5.2 Practical implications

With regard to practical implications, I want to encourage organizations to adopt MTM structures, because they actually increase intra-organizational connectivity and ultimately performance. Specifically, my study shows that higher MTM levels lead to increased levels of bonding among employees. In turn, this can help firms to speed up information and resources flow and thus outperform their industry rivals. However, as with any form of organizational design, there are some challenges related to MTM structure. In this study, I put a spotlight on MTM heterogeneity, which has the potential to cause heterogeneity in collaboration routines and thus reduces shared identification. In order to circumvent these diversity issues, I recommend that firms (1) avoid too high levels of MTM heterogeneity, (2) provide their employees with enough time and resources to get used to working in multiple teams, and (3) make sure to foster collective identification among co-workers. Although I have not directly addressed this in the present study, I propose that organizational support, positive leadership climate, and shared goals and visions represent important boundary conditions to foster shared identification and ensure MTM-functioning.

Although research has only begun to scratch the surface of the consequences related to the changing nature of work (e.g., Barley et al., 2017), it appears that individuals and organizations have to pay a price for an increased flexibility and individualization of work arrangements. For example, research on telework demonstrates that the allowance of offsite work leads to isolation of employees and a depersonalization of the organization as a whole (Rockmann & Pratt, 2015). Similarly, my work shows that MTM structure has the potential to create heterogeneous work and collaboration patterns, thus reducing shared identification and bonding among employees. Furthermore, the already
mentioned study by Broschak and Davis-Blake (2006) has reported comparable findings in the context of temporary and part-time work. I conclude that the changing nature of work may entail more negative side effects for organizations than initially assumed. Although I am convinced that a purely negative view is inappropriate and shortsighted, I urge firms to take a step back and thoroughly consider the appropriateness and consequences of whatever form of work they want to introduce. Warning examples such as Yahoo and BestBuy in the case of telework (Rockmann & Pratt, 2015) demonstrate the unpleasant consequences of hasty actions.

3.5.3 Limitations and directions for future research

Despite several strengths, as independent data sources for all central study variables, the following limitations should be considered when interpreting my results. First, the specific nature of the sample limited the generalizability of my findings, as the surveyed companies were mainly small and medium-sized. Second, the cross-sectional design prevented me from testing causality of the proposed relationships, although I tried to partly solve this issue by providing strong theoretical arguments. Third, I am aware of the potential weaknesses of subjective performance measures (e.g., Starbuck, 2004). However, the specific nature of my sample (i.e. small and privately owned companies that are not subject to detailed disclosure requirements) restricted a collection of objective information. That being said, benchmarking the perceptive measures allowed for a more specific testing of the competitive advantage argument associated with social capital theory (Leana & van Buren, 1999). I hope that future research replicates my findings while taking the above limitations into account.

Beyond limitations, my work offers promising directions for future research. First, scholars are invited to investigate the effects of MTM heterogeneity in greater detail. On the one hand, I believe that looking at MTM heterogeneity through the lens of social identity theory (Tajfel & Turner, 1985) represents a promising endeavor, as it allows for a more detailed consideration of questions of identification. On the other hand, equity theory (Adams, 1965) might be an
alternative explanation for the effects of MTM heterogeneity. That is, employees working in a higher number of teams feel treated unfairly, if their effort is not rewarded by the organization. Second, my analysis revealed that MTM heterogeneity also had a direct and negative effect on organizational social capital (cf. Table 8). Therefore, I suggest that future research investigates boundary conditions of MTM heterogeneity. How can the negative effects be reduced? In specific situations, can MTM heterogeneity yield positive effects? As a starting point, I advise scholars to refer to classical diversity research and consider firm-level conditions, such as organizational culture, leadership climate or temporal factors (e.g., Jackson et al., 2003). Finally, I agree with prior research that points to the potential of conducting multi-level studies of MTM (e.g., Bertolotti et al., 2015; Mortensen et al., 2007; O’Leary et al., 2011), which link individual, team, and organizational boundary conditions to outcomes on the respective levels of analysis. Although I am aware of the challenges related to this (Klein & Kozlowski, 2000), I advise researchers to embrace the complexity of contemporary organizational structure, rather than viewing these as confounds or design problems (Mathieu et al., 2008). I see this study as a further attempt to embrace and investigate the complex dimensionality and wide-ranging consequences related to MTM structures, and hope that it encourages other scholars to continually investigate the consequences of this substantial shift in organizational practice and research.
4 Study 3 – Energizing multiteam organizations: the leadership, climate, and performance of MTM structure\textsuperscript{13}

4.1 Introduction

I work in six or seven teams and I keep on telling my people that there is no alternative to this – for everyone in our company. […] We still assign formal leaders to each and every team in our organization, but in the daily routines, it is more like primus inter pares. The teams are self-managing, because they know best what to do. Therefore, I always tell my managers: ‘At best, you make yourselves dispensable in day-to-day work. Just try to provide your teams with the direction, resources and support they need to get their work done.’

(Interview with the head of HR of a global pharmaceutical company)

There is no alternative to multiteaming – for everyone in the company. Although this part of the quote may sound a bit exaggerated, evidence is accumulating that MTM is indeed not limited to single departments anymore (Bertolotti et al., 2015), but is used as a structural element to design entire organizations (Barley et al., 2017; Cummings & Haas, 2012; Söderlund, 2015). For instance, Cummings and Haas (2012, p. 334) note that “not a single team” in the organization they studied had all members allocate all of their time to one team, leading them to the conclusion that “stable, bounded teams might be a relic of the past”. In the present study, I use the term multiteam organization (MTO) to refer to this type of organizational design. Moreover, I am interested in the climate and effectiveness of such structures: what is it like to work in a MTO? What are potential consequences for firm performance? For what reasons do organizations decide to expand the application of MTM structures to the system level (Katz & Kahn, 1978)?

Most of all, I believe that organizational decision-makers are driven by the remarkable productive potential of MTOs. In this sense, MTM structures

\textsuperscript{13} An earlier version of this study has been accepted at the 78\textsuperscript{th} AOM Annual Meeting 2018.
represent a powerful motivational tool that values individual expertise, enables individuals to co-decide on their project assignments, allows for cross-project learning, and comprises built-in job-rotation capabilities (Mortensen et al., 2007). Furthermore, the network structure of MTOs enhances the interconnectivity of organizations (O’Leary et al., 2008), creating a global awareness of what is going on in the organization and enriching the employees’ social and knowledge base (Mortensen et al., 2007). Thus, if all gears mesh perfectly, the underlying structure of a MTO represents a strong source of productive energy and dynamic.

That being said, however, we must not forget that MTM structures also pose significant challenges for organizational coordination (Mortensen et al., 2007; O’Leary et al., 2011): individuals working in a MTO have to negotiate competing demands and coordinate their time and energy across multiple projects. Similarly, project leaders have to fight for their members’ time and attention. As customer demands and priorities often change rapidly, resources may be reallocated unexpectedly, creating a “domino effect” (Mortensen et al., 2007, p. 219) for other projects and ultimately a high potential for conflict. Moreover, the flexibility and fluidity of MTM structures may be misused for political ends, such as withholding resources or information for some projects, while supporting others. Striving for local optima, leaders pointing into different directions and employees torn between inconsistent goals – all of this illustrates the explosive dark side of MTOs, likely to result in a climate of corrosion and conflict.

To the best of my knowledge, extant research has not dealt with the phenomenon of MTOs (i.e., MTM structures at the system level of an organization), but was primarily concerned with the consequences and conditions of multiteaming for individuals and single teams (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; O’Leary et al., 2011; Pluut et al., 2014). Almost all of this research came to the conclusion that MTM is neither purely good nor bad (cf. Bertolotti et al., 2015; O’Leary et al., 2011; Pluut et al., 2014), but represents a “double-edged sword” (van de Brake et al., 2017).
Taking these findings as well as my above elaborations into account, I expect that the consequences of multiteaming at the organizational level are twofold in nature, too. Therefore, I do not exclusively focus on the organizational climate and effectiveness consequences of MTOs in the present study, but also integrate an important boundary condition into my model, which potentially helps to foster the favorable while avoiding the negative constituents of a MTO structure: organizational leadership.

Leadership has been found to play a key role for individual, team, and organizational effectiveness in a wide range of studies (Burke et al., 2006). In the past few years, however, basic assumptions of leadership theory have been called into question (e.g., Avolio, Walumbwa, & Weber, 2009; Pearce & Conger, 2003), inciting calls for new kinds of leadership that factor in the nature of contemporary organizations (Wageman et al., 2012). One core element of contemporary organizations has been referred to as the “changing ecology of teams” (Tannenbaum et al., 2012; Wageman et al., 2012, p. 301), provoking questions such as: what does leadership look like in self-managing teams (cf. Nonaka & Toyama, 2005)? If an employee works in five teams simultaneously, does this result in five ‘formal’ leaders (cf. introductory quote)? And, last but not least, what kind of leadership is needed to effectively navigate entire systems of contemporary collaboration (e.g., MTOs; cf. Wageman et al., 2012)? In line with my introductory quote, I propose that a combination of collective-focused hierarchical leadership (Kunze, De Jong, & Bruch, 2016) and integrated shared leadership (Pearce, Manz, & Sims, 2014) is most effective in coordinating MTOs. While a strong collective-focused leadership climate provides vision and shared goals for the entire organization and its subsystems (Kunze et al., 2016), the employees themselves take care of the day-to-day coordination in a shared and integrated fashion.

In all, my research is guided by the following two research questions: (1) what consequences does a MTO structure have for the climate and effectiveness of an organization? (2) What is the role of leadership in establishing a productive and dynamic climate in a MTO?
With my work, I hope to contribute to research on MTM in three decisive ways: first, by introducing the phenomenon of MTOs, I take research on MTM structures from the individual and team to the organizational level. Whereas research at lower levels of analysis was mostly guided by network-based and attention-based views (Bertolotti et al., 2015; Cummings & Haas, 2012; Mo & Wellman, 2016; O’Leary et al., 2011), a different framework is needed to study the climate, leadership and effectiveness of MTOs at the organizational level. I draw on a social system perspective (Katz & Kahn, 1978) in order to develop an organizational-level framework for the study of MTM. Recently, scholars have applied the ideas of a system perspective in theorizing on contemporary organizations and teams (e.g., Wageman et al., 2012) as well as organizational climate (Knight, Menges, & Bruch, in press). In line with this research, I conceptualize organizations as social systems, which consist of multiple subsystems (e.g., multiple teams), use a certain organizational design (e.g., MTM structure), and develop a specific organizational climate (Katz & Kahn, 1978). In particular, I believe that the notion of ‘subsystem-interface imperfections’ provides a sound basis for discussing the coordination challenges in MTOs as well as the need for leadership as “a boundary function” in organizations (Katz & Kahn, 1978, p. 532).

Second, I introduce the notion of organizational climate to the field of MTM research, acknowledging that the structure of an organization has significant system-level implications on how people feel, think, and act at work (cf. Walter & Bruch, 2010). Thereby, I refer to the construct of POE, which reflects the degree to which organizations have mobilized their employees’ emotional, cognitive, and behavioral potentials in pursuit of shared goals (Bruch & Ghoshal, 2003). I believe that this represents an important extension of prior research. First, with few exceptions (Maynard et al., 2012; Pluut et al., 2014), mediator variable studies are very rare in the field of MTM. Second, most theorizing on MTM has focused on a MTM – network/attention – performance link as explanatory mechanism (Bertolotti et al., 2015; Cummings & Haas, 2012; Mo & Wellman, 2016; O’Leary et al., 2011). Without trying to diminish the
valuable insights of this research, I argue that there are further collective-level processes at play in a MTO (cf. also Mortensen et al., 2007). Third, I build on Hackman’s (2012, p. 428) postulation to “quit pretending that the system context of group behavior is irrelevant to understanding what happens within groups”. In particular, I argue that exclusively studying team-level processes in a MTO is not capable of grasping the overall effectiveness of such structures. As illustrated by Wageman et al. (2012, p. 309), “if workers’ efforts are stretched over several teams serving several clients, one client’s satisfaction may come at the expense of another’s. The team with the satisfied client may appear to be effective, but its ‘poaching’ of people’s time and effort from other teams is likely to be counterproductive for the organization”.

Finally, my study is also the first to deal with the topic of leadership in MTM structures. Prior work on multiteaming acknowledges that leadership of MTM systems is a critical challenge for both organizational practice and research (e.g., Mortensen et al., 2007; Wageman et al., 2012). From a practical perspective, Mortensen et al. (2007) explain that time restrictions make it challenging for project leaders to take on the managerial role (i.e., day-to-day coordination activities) as well as contribute to a project content-wise (i.e., knowledge and expertise). Although it is possible to work overtime (e.g., project work during the day, management work at night; Mortensen et al., 2007), organizations as well as its members would strongly benefit from a leadership model that accounts for the multiple role expectations of project leaders. From a scientific perspective, Wageman et al. (2012) raise concerns that classical conceptualizations of teams and leadership are incapable of grasping the complex systemic nature of contemporary organizational structures (e.g., MTOs). With my ‘synergistic’ (cf. Pearce, Hoch, Jeppesen, & Wegge, 2010) model of collective-focused leadership climate (Kunze et al., 2016) and integrated shared leadership (Pearce et al., 2014), I hope to take a first step towards solving these issues. On the one hand, the integration of shared horizontal leadership reduces the coordination responsibilities of formal leaders. On the other hand, the notion of collective-focused leadership climate
inherently ‘brackets’ (cf. Hackman, 2012) the leadership of multiple teams with the system level of MTOs. Furthermore, I also contribute to the debate on the role of context in the effectiveness of hierarchical and shared leadership (Hoch & Kozlowski, 2014; Pearce & Sims, 2002; Walter & Bruch, 2010), as I test my synergistic model at different levels of organizational multiteaming.

In the following paragraphs, I discuss the concept of MTM as a phenomenon rooted in multiple levels of analysis and theoretical perspectives, and expand my elaborations on MTOs as social systems (Katz & Kahn, 1978). Then, I define and elaborate on the concepts of POE, collective-focused leadership climate, and integrated shared leadership at the organizational level. Based on this, I develop hypotheses that capture my theoretical model and test these using regression and bootstrapping analyses in a sample of 82 German organizations. Finally, I discuss the results as well as potential implications of my work and provide directions for future research.

In the past few years, several authors (e.g., Hackman, 2012; Knight et al., in press; Wageman et al., 2012) have advocated applying a social system perspective to the study of organizations, which accounts for the nature and context of contemporary forms of collaboration. Wageman et al. (2012, p. 310) even provocatively argue that focusing on classical team theory and definitions “risks mischaracterizing – or missing altogether – how the design and leadership of contemporary collaborations is affecting the effectiveness of social systems seen as a whole”. I could not agree more and, with the present study, hope to contribute to this fundamental discourse.

4.2 Theory

From the very beginning, the study of MTM has been rooted in multiple levels of analysis as well as multiple theoretical perspectives. This is particularly due to early work by Mortensen et al. (2007) and O’Leary et al. (2011). In an exploratory study, Mortensen et al. (2007) delve into the multifaceted nature of MTM and describe it as a phenomenon with a wide range of consequences at
the individual, team, and organizational level. Drawing on this, the seminal study by O’Leary et al. (2011) applies theories of social network and attention and provides a rich framework for studying the consequences of MTM for learning and effectiveness at the individual and team levels. During the past few years, a number of notable studies have followed.

At the individual level, MTM has been related to effectiveness and learning (O’Leary et al., 2011), job strain and work engagement (Pluut et al., 2014), and performance and absenteeism (van de Brake et al., 2017). Thereby, scholars have relied on a wide range of theoretical perspectives, including social network and attention-based theories (Mo & Wellman, 2016; O’Leary et al., 2011), a job demands-resources framework (Pluut et al., 2014), and a challenge-hindrance framework (van de Brake et al., 2017). Furthermore, extant research points to the relevance of additional theoretical lenses in the context of individual multiteaming, such as role theory (e.g., O’Leary et al., 2011; Pluut et al., 2014) or work motivation theory (e.g., Mortensen et al., 2007).

In contrast to this, research at the team-level has almost exclusively built on the propositions by O’Leary et al. (2011): both, Bertolotti et al. (2015) and Cummings and Haas (2012) applied theories of knowledge and attention to study the performance of teams in a MTM context. In addition to this, Maynard et al. (2012) referred to team effectiveness theory and investigated the link between percentage of time spent on a focal team, transactive memory, and team effectiveness.

At the organizational level of analysis, however, research is almost non-existent. I believe that one major reason for this is that, in contrast to the individual and team levels (O’Leary et al., 2011), we lack a sound theoretical framework for studying the organizational-level consequences of multiteaming. Due to this, it is difficult to theorize on and even parsimoniously speak about the organizational consequences of multiteaming without constantly skipping

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14 It is interesting to note that an earlier version of this study also included the organizational level of analysis (O’Leary et al. (2008)).
between the various levels of analysis. Therefore, I introduce the ideas of social system perspective (Katz & Kahn, 1978) to the study of MTM. In line with prior research (Hackman, 2012; Wageman et al., 2012), I believe that thinking of MTOs as social systems is a promising endeavor. In the following paragraph, I elaborate on the foundations of social system perspective and explain its usefulness in the study of MTM structure.

4.2.1 MTOs as social systems

In their seminal book *The Social Psychology of Organizations*, Katz and Kahn (1978) propose to consider organizations as social systems that convert inputs (e.g., raw material, energy) via throughput into outputs (e.g., products, services) in cyclical patterns. Social systems are nested in an environment and consist of various subsystems, which fulfill important functions in the product or service creation process (Katz & Kahn, 1978). Moreover, systems use a specific organizational design to implement strategy (Thompson, 1967) and foster the development of a desired organizational climate (Katz & Kahn, 1978; Knight et al., in press).

*Teams as subsystems.* As mentioned before, *subsystems* play an important role in organizations, as they “perform functions vital for the organization in that the failure of any would in time incapacitate the organization itself” (Katz & Kahn, 1978, p. 59). In a classical organizational structure, Katz and Kahn (1978) distinguish between production or technical subsystems, supportive subsystems, maintenance subsystems, managerial subsystems, and the like. In contemporary forms of collaboration (Wageman et al., 2012), however, the rigid separation of different organizational functions has been relaxed. Today, organizations heavily rely on cross-functional teams, which combine “varied sources of expertise” from different organizational functions in order to reduce cycle time and create knowledge (Denison, Hart, & Kahn, 1996, p. 1006). In the context of MTM, this has been referred to as “multidisciplinary diversity” (Mo & Wellman, 2016, p. 1251). Moreover, O’Leary et al. (2011) argue that the integration of different perspectives and sources of knowledge represents a
major reason for the adoption of MTM structures. As this ultimately results in the integration of various organizational functions into single multiteaming units, I believe that it is appropriate to consider the single teams in a MTO as its multiple subsystems. Drawing on this, I now delve deeper into the foundations of social systems perspective and elaborate on the climate consequences as well as the coordination challenges in a MTO.

**Organizational climate.** According to Katz and Kahn (1978, p. 50), “organizations possess distinctive patterns of collective feeling and beliefs passed along to new group members”, which are comparable to the heritage of a society. These shared patterns, norms, values, and beliefs are referred to as organizational climate. Furthermore, Katz and Kahn (1978) argue that an organizational climate develops as the consequence of the history, structure, and design of an organization. This proposition is backed up by extant research demonstrating that the design of an organization indeed stimulates different forms of climate in an organization, including affective, cognitive, and behavioral elements (Knight et al., in press; Parke & Seo, 2017; Walter & Bruch, 2010). In sum, the design of an organization (e.g., MTO) appears to be a powerful tool for establishing a specific organizational climate.

**Imperfection of organizational design.** That being said, however, Katz and Kahn (1978, p. 530) argue that all types of organizational structure necessarily “include imperfections and incompleteness […] as a formal, abstract design”. No matter how detailed and accurate the charts and policies of an organization have been crafted, they will always differ from what is going on in the ‘real’ organization. According to Katz and Kahn (1978, p. 532), the main reason for this discrepancy is that “the actual behavior is infinitely more complex, inclusive, and variable than the plan”. Grounded in this assumption, Katz and Kahn (1978) illustrate a number of sources for the incompleteness of organizational design. Two of them are particularly relevant for the present study.
First, Katz and Kahn (1978) point to the relationships between subsystems, which are often not specified in organizational ‘drawing boards’ and can thus be considered as breaks between parts of the system (Rice, 1963). In a MTM structure, the relationships between subsystems resemble the coordination challenges between multiple teams (cf. Mortensen et al., 2007). Although an organization may have developed clear procedures and rules regarding the allocation of resources between different teams or projects, it is impossible to account for all possible scenarios and exclude the ‘human factor’ (i.e., self-interest, dissent, and conflict) in social organizations (Katz & Kahn, 1978).

Second, the changing environmental conditions are considered to be an important source of organizational imperfection, because formalized organizational structures are often not flexible and adaptive enough to deal with environmental changes (Katz & Kahn, 1978). For example, customer demands often change rapidly in MTOs, leading to reprioritization and reallocation of resources, and ultimately result in conflict between multiple teams (Mortensen et al., 2007).

**Leadership as boundary function.** Facing this imperfection, Katz and Kahn (1978) propose organizational leadership as key lever to overcome the structural deficits. They even argue that the need for leadership is constituted in the imperfection of organizational design and refer to organizational leadership as a “boundary function” in organizations (Katz & Kahn, 1978, p. 532). In other words, leadership interferes where formal structure fails in coordinating the dynamics and relationships between subsystems (i.e., multiple teams; Rice, 1963). Thereby, the leadership role need not be formally assigned, but can also emerge informally as individuals take command (Katz & Kahn, 1978). Similar arguments can be found in the literature on boundary spanning in teams and organizations (Ancona & Caldwell, 1992).

For now, Figure 11 summarizes my elaborations on MTOs as social systems and represents the guiding framework of my organizational-level study of MTM structure. Later in this study, I will deal with the design and emergence of
organizational leadership in MTOs in closer detail. Before I do so, however, I want to introduce and discuss the concepts of MTM level, POE, collective-focused leadership climate, and integrated shared leadership as phenomena at the organizational level of analysis.

4.2.2 MTM level

MTM level is defined as a unit-level construct that provides information on the intensity of an organization’s use of MTM structures. MTM level is operationalized as the average number of team memberships per organization. In this regard, MTM level resembles the measure of (average) number of team memberships at the individual and team levels (e.g., O’Leary et al., 2011).
4.2.3 Climate of productive energy in MTOs

According to Carr, Schmidt, Ford, and DeShon (2003), organizational climate reflects shared perceptions of organizational policies, practices, and procedures, and collectively captures the employees’ evaluations of their work environment (Glick, 1985). Thereby, climate researchers (e.g., Carr et al., 2003; Ostroff, 1993) often point to the multifaceted nature of an organization’s climate, comprising affective, cognitive, and behavioral elements. As noted earlier, POE also represents a multidimensional concept, as it reflects the degree to which organizations have mobilized their employees’ emotional, cognitive, and behavioral potentials in pursuit of common goals (Bruch & Ghoshal, 2003). Moreover, POE has been described as an important variable at the organizational level (Walter & Bruch, 2010) that captures the “extent to which an organization has a climate of productive energy” (Raes, Bruch, & De Jong, 2012, p. 171). Finally, POE was related to multiple measures of organizational effectiveness (e.g., organizational performance, collective job satisfaction, turnover intentions) in a number of studies (Bruch & Ghoshal, 2003; Kipfelsberger & Bruch, 2014; Raes et al., 2012). On these grounds, I believe that POE represents an appropriate measure of the organizational climate in a MTO: on the one hand, high levels of POE reflect the positive effects of a MTM structure (i.e., motivational and network capabilities), manifesting in a dynamic and fluid system of multiple teams that act in concert and are guided by shared overall goals. On the other hand, the before-mentioned coordination challenges in MTOs, particularly regarding the relationships between subsystems (i.e., teams), are likely to stimulate conflict and organizational politicking, thus resulting in low levels of POE.

From a social systems perspective (Katz & Kahn, 1978), the climate of an organization is the product of its design and leadership. Similarly, Walter and Bruch (2010) demonstrate that the development of POE is contingent on the structure and leadership climate in an organization. In an empirical study of 125 organizations, they found that transformational leadership (TFL) climate and two attributes of organizational structure (i.e., centralization and formalization)
interact and jointly affect the energy levels in an organization. In particular, Walter and Bruch (2010, p. 770) note that leadership climate and structure “benefit all three dimensions of POE and, thus, will be positively associated with its overall POE level” (Walter & Bruch, 2010, p. 770). This line of reasoning is in accordance with conceptual work by Cole, Bruch, and Vogel (2012, p. 449) who argue and empirically demonstrate that there are three distinct dimensions of POE (i.e., affective, cognitive, and behavioral) and that the three dimensions form an “overall construct of productive energy”.

Following this logic, I suggest that MTM structure and organizational leadership jointly influence the way people collectively feel, think, and act in a MTO. From an affective perspective, leadership will influence the amount of affect-laden ‘hassles’ and ‘uplifts’ that employees experience in a MTM structure (e.g., Dasborough, 2006; Weiss & Cropanzano, 1996). If the right leadership collectively orchestrates the various subsystems of an organization, it is likely that the positive dynamics in a MTO are perceived as an “ambient stimulus” (Walter & Bruch, 2010, p. 770), impacting the organization as a whole. This argumentation is rooted in affective events theory (Weiss & Cropanzano, 1996), which states that affective reactions mediate the relationship between work events and organizational outcomes, such as the climate of an organization (Parke & Seo, 2017). From a cognitive perspective, the right leadership will help the employees to form positive cognitions about multiteaming and thus free cognitive resources for the actual task accomplishment. Research by Kanfer and Ackerman (1989) demonstrates that self-regulatory activities can occupy cognitive resources necessary for getting the actual work done (e.g., task understanding). This is of particular importance in MTM structures, where time and especially attention have been described as scarce resources (Bertolotti et al., 2015; Cummings & Haas, 2012; O’Leary et al., 2011). Finally, the right leadership can have a strong role-modeling effect on how the employees act in a MTO (e.g., Shamir, House, & Arthur, 1993). Therefore, it matters also from a behavioral perspective, whether leaders and co-workers (in the case of shared leadership) enact strong or weak leadership
behaviors. For example, if leaders of different teams proclaim varying overall goals and point into different directions, this will result in confusion, ambiguity, and ultimately reduced behavioral capacities of the organization. Similarly, when there are no shared coordination activities among co-workers, work will be accomplished in a disintegrated and inefficient fashion, but not with high levels of energy and in the pursuit of common organizational goals (Bruch & Ghoshal, 2003).

As noted above, I propose that the ‘right leadership’ in a MTO is a synergistic combination of collective-focused leadership climate and integrated shared leadership. Both concepts are introduced in the following.

4.2.4 Collective-focused leadership climate

Similar to other climate constructs, the notion of “leadership climate assesses the average perceptions and behaviors throughout an organization” (Kunze et al., 2016, p. 888). For the sake of parsimony, I will not present a detailed discussion of the antecedents, emergence, and consequences of organizational leadership climate here. This has already been done in a number of notable studies (Kunze et al., 2016; Menges, Walter, Vogel, & Bruch, 2011; Walter & Bruch, 2010). Rather, I will focus on the concept of collective-focused leadership climate, which represents an integral part of my synergistic leadership model in MTOs.

The concept of collective-focused leadership builds on the finding that leadership directed at the collective can have different effects as compared to leadership directed at individual employees (Wu, Tsui, & Kinicki, 2010). Drawing on this, Kunze et al. (2016) recently introduced the distinction between collective-focused leadership climate and differentiated individual-focused leadership, which both rest on the TFL dimensions developed by Podsakoff, MacKenzie, and Bommer (1996). In particular, collective-focused leadership climate is a combination of the two TFL dimensions directed at the collective (i.e., articulating a vision, fostering collective goals) and can emerge if the
employees perceive that the leaders in their organization jointly engage in such behaviors (Kunze et al., 2016). On the one hand, *articulating a vision* means that leaders develop and advocate “a captivating idea for the future of the collective” (Kunze et al., 2016, p. 889). In order to embed and spread this vision, leaders engage in symbolic behaviors, such as using slogans, speeches, and rituals, and try to win the employees as followers for commonly accepted and desirable goals (Shamir, Zakay, Breinin, & Popper, 1998). On the other hand, *fostering collective goals* refers to “leaders’ behaviors targeted at supporting and promoting cooperation” among the various employees and groups in an organization (Kunze et al., 2016, p. 889), in order to reach common and overarching goals that are in line with the shared vision (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). The study by Kunze et al. (2016) shows that a strong collective-focused leadership climate is positively related to an affective-organizational-commitment climate and indirectly increases the organizational-citizenship-behavior climate in an organization as well as its effectiveness. Similar to this, I propose that a strong collective-focused leadership climate helps to establish collective system-level goals and foster the collaboration among the various subsystems in a MTO, thus contributing to high levels of POE in MTM structures. I now turn to the second component of my synergistic leadership model – integrated shared leadership.

### 4.2.5 Integrated shared leadership in organizations

Facing a continuous shift towards team-based forms of collaboration and knowledge work, Pearce and Barkus (2004, p. 47) raise the question whether “our traditional models and approaches to leadership are still appropriate or if they need revising and rethinking”. In particular, the authors critically point to the assumption that leadership is often thought of as “one person projecting downward influence on followers” (Pearce & Barkus, 2004, pp. 47–48). Furthermore, this narrow conceptualization of leadership also does not account for the fluidity, complexity and system-like nature of contemporary
collaboration (Wageman et al., 2012). Based on these arguments, Pearce and Conger (2003) introduced the concept of shared leadership.

Shared leadership is defined as “a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both” (Pearce & Conger, 2003, p. 1). Adding to this definition, Pearce and Conger (2003, p. 48) describe shared leadership as a “simultaneous, ongoing, mutual influence process” that is characterized by the serial and alternate emergence of multiple leaders. Moreover, extant research argues that shared leadership is particularly effective in environments characterized by high levels of interdependence, creativity, and complexity (Pearce & Barkus, 2004; Pearce & Conger, 2003; Pearce & Sims, 2002). Since all of these characteristics are outstandingly pronounced in MTM structures (Mortensen et al., 2007), I propose that shared leadership also plays a crucial role in the effectiveness of MTOs. As I now introduce the concept of integrated shared leadership (Pearce et al., 2014), I need to engage in two fundamental discussions – one that is related to leadership substitution, and one that is related to level of analysis.

According to the substitutes for leadership literature (e.g., Kerr & Jermier, 1978), certain conditions (e.g., routinization and standardization of work) can serve as substitutes for classical sources of leadership. In this vein, Pearce and Sims (2002) suggest that shared leadership may also represent a substitute for formally appointed hierarchical leadership. In line with Pearce and Barkus (2004), however, I do not agree with ‘Let’s Fire All the Managers’ calls raised in popular research (Hamel, 2011). Rather, I propose that shared leadership primarily serves as a substitute for certain leader behaviors in MTM structures, such as day-to-day coordination and mutual empowerment. Meanwhile, formal leaders are still responsible for the “[c]ommunication of a uniting vision” and “managing the team’s boundaries” (Pearce & Barkus, 2004, p. 50), which are both reflected in the concept of collective-focused leadership climate (Kunze et al., 2016). Extant empirical research demonstrates that “shared and hierarchical leadership work synergistically” (Pearce et al., 2010, p. 152) and affect
individual, group, and organizational outcomes (Ensley, Hmieleski, & Pearce, 2006; Pearce & Sims, 2002). Building on this, I propose that the combination of hierarchical and shared leadership is best thought of as a continuum, with the dominance of the respective sources of leadership depending on contextual factors (e.g., organizational structure, task characteristics, and employee maturity). Pearce et al. (2014, xi) have forwarded similar arguments: “all leadership is shared, it is simply a matter of degree”.

Moreover, Pearce et al. (2014, xi) state that shared leadership is most effective, if it is shared “across structural boundaries” and “across organizational forms”. In this regard, their work represents an important cornerstone in the research on shared leadership, as it advances this field of research to the organizational level of analysis (cf. also Wegge et al., 2010). Prior research was often based on the assumption that shared leadership is limited to the team level (Carson, Tesluk, & Marrone, 2007; Hoch, Pearce, & Welzel, 2010; Nicolaides et al., 2014). Pearce et al. (2014), however, propose a foundational taxonomy of four different forms of shared leadership that occur in entire systems of organizations: rotated, integrated, distributed, and comprehensive shared leadership. In the context of MTOs, I propose that the concept of integrated shared leadership is most appropriate. Pearce et al. (2014) argue that integrated shared leadership is more dynamic than rotated and distributed shared leadership, as “leadership roles shift and transition more fluidly and rapidly between the individuals involved” (Pearce et al., 2014, xvii). Meanwhile, comprehensive shared leadership rather refers to a kind of ‘shared leadership climate’, where the entire organization is infused with shared leadership practices and hierarchical leadership becomes mostly obsolete (for a more detailed discussion, cf. Pearce et al., 2014). Following the notion of a synergistic model of leadership (Pearce et al., 2010), I propose that leadership in MTOs is most effective, if formal leaders engage in leadership behaviors directed at the collective (i.e., articulating a vision, fostering collective goals) and the employees take care of the daily coordination in an emergent, integrated, and alternate fashion. The concept of integrated
shared leadership best reflects this idea and, thus, is used as a second pillar of my leadership model.

4.2.6 Hypotheses development

Having introduced the main concepts (i.e., MTM level, POE, collective-focused leadership climate, and integrated shared leadership), I now turn to the development of hypotheses regarding the climate, leadership and effectiveness of MTOs. Drawing on my social system framework, I propose that the application of MTM structures at the system level of an organization has wide-ranging consequences for its climate of POE. On the one hand, the motivational capacities (i.e., appreciation of expertise, co-decisions on project assignments, cross-project learning, and built-in job rotation; Mortensen et al., 2007) and the increased intra-organizational connectivity (i.e., global organizational awareness, social enrichment, and knowledge exchange; Mortensen et al., 2007; O’Leary et al., 2008) in MTOs are proposed to result in a climate of high productive energy. On the other hand, however, the coordination challenges (cf. Mortensen et al., 2007) between the multiple teams in an organization (Katz & Kahn, 1978) are likely to yield contrary effects, thus resulting in low levels of POE. Similar to extant research on the individual and team levels (e.g., Bertolotti et al., 2015; Maynard et al., 2012; van de Brake et al., 2017), I therefore anticipate that the net system-level effect of multiteaming on POE depends on contextual factors such as organizational leadership. Figure 12 contains my conceptual model.

In order to develop respective hypotheses, I draw on work by Katz and Kahn concerning the organizational leadership of social systems. Katz and Kahn (1978, p. 536) state that leadership in complex social settings is “always a combined function of social structural factors and of the particular characteristics of the individuals making up the structure”. Based on this notion, they propose three basic patterns of organizational leadership as a system-level
phenomenon: (1) origination, (2) interpolation, and (3) administration. Thereby, they acknowledge that the “most persistent and thoroughly demonstrated difference between successful and unsuccessful leadership at all three levels has to do with the distribution or sharing of the leadership function” (Katz & Kahn, 1978, p. 571). In line with Pearce et al. (2014), those organizations in which leadership is widely shared are considered to be most effective (Katz & Kahn, 1978).

**Figure 12. Conceptual model and data sources (study 3)**

*Note.* MTM = multiple team membership. POE = productive organizational energy. TMT = top-management team. Box frames represent the respective data sources (cf. upper right corner).

*Origination* is defined as “the introduction of structural change or policy formulation” (Katz & Kahn, 1978, p. 536). Such initiation of structure takes place irregularly, is often the consequence of external changes (e.g., changes in the market), and primarily driven by the TMT of organizations (Katz & Kahn, 1978). Concerning my model, the initial introduction of MTM structures can be classified as origination leadership, since the decisions to introduce

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15 Please note that these terms have different meanings as compared to today’s common parlance (cf. Katz & Kahn, 1978).
Multiteaming are structural in nature and often driven by externalities (e.g., need for innovation and efficiency; Bertolotti et al., 2015; O’Leary et al., 2011). Interpolation refers to the more continuous ‘piecing-out’ of existing formal structure. Every statement of organizational policy and overarching organizational goals are by definition general and often not tangible for subsystems and employees. Therefore, the goal of interpolation is to translate and adopt these messages to the sub-system contexts (Katz & Kahn, 1978). Concerning my model, the concept of collective-focused leadership climate resembles activities of interpolation. In this vein, collective-focused leadership includes that formal leaders symbolically articulate an overarching vision and foster the pursuit of common organizational goals (Kunze et al., 2016).

Finally, administration includes acts of leadership that use existing organizational devices and follow established rules. Particularly important in this regard is the notion of ‘contextual interpretation of rules’ (Katz & Kahn, 1978). This means that the individuals in an organization have to consider the larger framework before executing routinized procedures. Only in those cases, it is legitimate to speak of ‘administration’ as organizational leadership (Katz & Kahn, 1978). In the context of the present study, I propose that the concept of integrated shared leadership can be categorized as patterns of administration. Although there may be clear rules and procedures regarding the resource allocation and prioritization in MTOs, it is through the impact of shared leadership that the various subsystems (i.e., multiple teams) in an organization operate smoothly and in concert (Katz & Kahn, 1978; Pearce et al., 2014). Rooted in social system perspective, Katz and Kahn (1978) propose that systems are most productive, if none of the three patterns of organizational leadership (i.e., origination, interpolation, and administration) is neglected and the leadership function is shared among multiple groups (Pearce et al., 2014; Pearce & Conger, 2003). Therefore, I expect that MTOs will only develop high levels of POE, if both collective-focused leadership climate and integrated shared leadership are strongly pronounced. This results in the following hypothesis:
Hypothesis 1. Collective-focused leadership climate and integrated shared leadership jointly moderate the relation between MTM level and POE; relative to all other combinations, the relationship is most pronounced at high levels of both, collective-focused leadership climate and integrated shared leadership.

In a social system perspective, organizational climate takes a mediating role in the relationship between organizational design and organizational effectiveness (Katz & Kahn, 1978). Similarly, extant research has demonstrated that POE climate is significantly related to a number of important organizational outcomes, such as organizational performance (Bruch & Ghoshal, 2003; Cole et al., 2012; Kipfelsberger & Bruch, 2014). Building on this, I suggest that MTM level is related to firm performance via indirect (i.e., mediated by POE) and conditional (i.e., moderated by collective-focused leadership climate and integrated shared leadership) effects. In particular, I expect that high MTM levels only lead to high levels of POE and, ultimately, firm performance, if both collective-focused leadership climate and integrated shared leadership are strongly pronounced.

In all, a moderated mediation model is proposed (Preacher et al., 2007). Following recommendations by Hayes and Preacher (2010), I investigate the statistical significance of this moderated mediation model by testing both, single paths and conditional indirect effects. Therefore, I formulate the following two hypotheses:

Hypothesis 2. POE is positively related to firm performance.

Hypothesis 3. The relationship between MTM level and firm performance is jointly moderated by collective-focused leadership climate and integrated shared leadership and mediated by POE; relative to all other combinations, the indirect effect is most pronounced at high levels of both, collective-focused leadership climate and integrated shared leadership.
4.3 Methods

4.3.1 Sample

Data collection for the present study took place between March and June 2016 as part of a benchmarking study in cooperation with a professional HR agency. 87 SMEs from Germany applied to participate in the research project. As a reward for their participation, companies received an extensive benchmarking report. Due to dropouts (i.e., withdrawal of participation, missing data), the final sample contained 82 organizations, yielding an organizational response rate of 94 percent. The companies in the sample varied in size from 20 to 1’678 employees and were part of four different industries (48 percent = service; 28 percent = production; 12 percent = retail; 12 percent = finance). To avoid concerns of a common method bias (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), I obtained data from five different sources: three employee surveys, a top management survey, and a survey of the head of HR.

First, all employees of the 82 organizations were invited to the study. They received an e-mail from the HR department that described the study purpose and contained the link to a web-based survey hosted by an independent IT company. Overall, 12’720 of the invited employees participated. The participants were asked to provide general demographic and vocational information in a standardized questionnaire. Then, to limit the amount of questions per employee, the participants were randomly assigned to one of three different versions of the employee survey and forwarded to the questionnaires. Thus, all three versions of the employee survey (A, B, and C) were answered by randomly selected 33 percent of the employees respectively.

Concerning the present study, MTM level was part of employee survey A, the leadership scales (i.e., collective-focused leadership climate and integrated shared leadership) were integrated in employee survey B, and POE was contained in employee survey C (cf. Figure 12). On average, the employees in my sample were 39.57 years old, mostly male (55 percent), and had been with
their organization for 9.21 years. Concerning the prevalence of MTM, the employees indicated to have worked in an average of 1.89 teams during the past six months, ranging between one and twenty parallel team memberships.

Second, I asked the members of the TMTs to assess firm performance. In total, 215 executives replied to the questionnaire, ranging from one to twelve participants per organization (mean = 2.56).

Finally, the head of HR from each organization was asked to answer to the same set of performance-related criteria as the TMT members. Moreover, s/he provided information on general company characteristics, which were used as control variables in the analyses (e.g., company size and industry affiliation).

4.3.2 Measures

All questionnaires were administered in German. If no German version of the scales were available, I used a double-blind back-translation procedure to guarantee content similarity with the original English scales (Brislin, 1986). Unless stated otherwise, I used 5-point scales for my measures (1=‘strongly disagree’; 5=‘strongly agree’). Since the model is situated at the organizational-level of analysis, I calculated intra-class correlation coefficients (ICC1 and ICC2) and the average deviation index AD_{M(j)}.

**MTM level.** In line with extant research (Bertolotti et al., 2015; Cummings & Haas, 2012; Mortensen, 2014; O’Leary et al., 2011), I asked the employees to indicate their average number of team memberships during the past six months. I then mean\(^{16}\) aggregated individual information on team memberships in order to obtain the MTM level per organization.

**POE.** To assess the climate of POE in organizations, I applied the productive energy measure (PEM; Cole et al., 2012), which has demonstrated good psychometric properties throughout several studies (Cole et al., 2012; 2016).

\(^{16}\) In contrast to study 2, the present study does not focus on MTM heterogeneity. Therefore, it is possible to apply mean rather than median aggregation.
Kipfelsberger & Bruch, 2014; Kunze et al., 2013; Raes et al., 2012). The PEM consists of 14 statements, of which five relate to the affective dimension of POE (sample item: ‘Employees of this organization feel energetic in their job’), five to the cognitive dimension (sample item: ‘Employees of this organization are ready to act at any given time’), and four to the behavioral dimension (sample item: ‘Employees of this organization go out of their way to ensure the company succeeds’). Since the construct of POE follows a referent-shift model (Chan, 1998), I calculated ICCs and inter-rater agreement, justifying an aggregation to the organizational level of analysis (ICC$_1$ = .163, ICC$_2$ = .896, p < 0.001, AD$_{M(I)}$ = .663). Cronbach’s α (1951) indicated strong internal consistency (α = .96).

**Collective-focused leadership climate.** Following Kunze et al. (2016), I asked the employees to evaluate the extent to which their direct supervisors showed leadership behaviors directed at the collective. I used nine items from the two subscales ‘articulating a vision’ (sample item: ‘My direct supervisor has a clear understanding of where we are going’) and ‘fostering collective goals” (sample item: ‘My direct supervisor fosters collaboration among work groups’) of the TFL measure developed by Podsakoff et al. (1996). Adopting a direct consensus model (Chan, 1998), I aggregated this information to obtain an organization’s collective focused leadership climate (cf. Kunze et al., 2016; Walter & Bruch, 2010). Aggregation statistics and inter-rater agreement supported this procedure (ICC$_1$ = .136, ICC$_2$ = .845, p < 0.001, AD$_{M(I)}$ = .745). Due to the novelty of the measure, I also conducted a CFA: CFI = .902, TLI = .870, IFI = .903, SRMR = .046. The one-factor solution was supported. The internal consistency estimate was α = .96.

**Integrated shared leadership.** In line with Pearce et al. (2014), I do not refer to integrated shared leadership as organizational leadership climate. Rather, I conceptualize integrated shared leadership as the average level of shared leadership behaviors in an organization, which are demonstrated by the employees in an emergent and alternate fashion. This conceptualization stands in contrast to most research at the team-level, which applied referent-shift models (Hoch et al., 2010; Pearce & Sims, 2002), thus assuming that there is a
commonly agreed level of shared leadership in a team (Chan, 1998). Reflecting on different measures of shared leadership, D’Innocenzo, Mathieu, and Kukenberger (2016, p. 1970) criticize that referent-shift models make “no differentiation in terms of who or which members from the team are exhibiting leadership”. This is problematic (cf. also Nicolaides et al., 2014; Wang, Waldman, & Zhang, 2014), because participants are asked to perform “mental arithmetic” and aggregate multiple dyadic member relations (D’Innocenzo et al., 2016, p. 1972). In the context of a MTO, in which individuals are part of multiple teams, I presume this ‘arithmetic’ to be even more complex. In search for an alternative conceptualization (and in absence of detailed network data; D’Innocenzo et al., 2016), I thus turn to research on emergent leadership, which has been described as a “theoretical base of shared leadership” (Pearce & Sims, 2002, p. 176) and also represents a core element of the concept of integrated shared leadership (Pearce et al., 2014). In a study on the emergence of leadership, Kent and Moss (1994) compare self-perceptions of emergent leadership with the perceptions of team members. Interestingly, they find that “those whom others perceive as leaders also perceive themselves as leaders” (Kent & Moss, 1994, p. 1343). In other words, individuals have a relatively accurate picture of their own emergent leadership behaviors. Building on this, I decided to apply a direct consensus composition model to measure integrated shared leadership at the organizational level (Chan, 1998), in which I asked the employees to assess their own levels of shared leadership behavior. To account for both, the emergent and shared coordinating nature of integrated shared leadership, I adopted three items (sample item: ‘I assume a leadership role’) from the emergent leadership measure by Kent and Moss (1994) and three items (sample item: ‘I urge my colleagues to assume responsibilities on their own’) from the shared empowering leadership measure by Pearce and Sims (2002). I believe that the notion of shared empowering leadership strongly fits my argumentation of encouraging others to take coordinative action (Pearce & Sims, 2002). To check the validity of this scale, I ran a CFA (CFI = .963, TLI = .938, IFI = .963, SRMR = .0389) and found that a one-factor solution of integrated
shared leadership was strongly supported. Moreover, the application of a direct consensus model was justified by aggregation statistics, which yielded acceptable results (ICC₁ = .054, ICC₂ = .698, p < 0.001, ADₘ(J) = .840). The internal consistency of the scale was good (α = .93).

**Firm performance.** I followed recommendations by Combs et al. (2005) and distinguished between organizational and operational criteria to measure firm performance. Since objective information on the firms’ performance was not available (i.e., German SMEs are affected by disclosure requirements to a limited extent only), I asked the TMTs and HR representatives to assess firm performance relative to the performance of their direct industry rivals. This kind of benchmarking has also been applied in prior research (Kunze et al., 2011; Rogers & Wright, 1998). Moreover, the validity of subjective performance measures has been demonstrated in numerous studies (Böhm et al., 2014; Kunze et al., 2011, 2013; RoI & Morrow, 1999; Wall et al., 2004). The members of the TMT and the HR representatives were asked to evaluate five performance criteria on a 7-point Likert-type response scale (1 = ‘much worse’; 7 = ‘much better’), of which one was related to overall firm performance, two to organizational performance (company growth, return on investment), and two to operational performance (efficiency of business processes, employee loyalty). I then aggregated this information and mean calculated the values for firm performance, assuming that all performance items load on one common performance factor (cf. Kunze et al., 2013). Both, aggregation to the organizational level (ICC₁ = .513, ICC₂ = .776, p < 0.001, ADₘ(J) = .441) and the one-factor solution (CFI = .979, TLI = .959, IFI = .980, SRMR = .059) were strongly supported in my data. The internal consistency estimate was α = .82.

**Control variables.** I used a set of control variables to account for omitted variable bias and limit the risk of endogeneity. First, following prior research (e.g., Kunze et al., 2016), I asked the HR representatives to provide information on firm size and industry affiliation (i.e., production, service, retail, and finance). Due to a skewed distribution, I log-transformed firm size. Second, I accounted for the firms’ polychronic culture and the average level IPO. Prior
research (e.g., Bertolotti et al., 2015; O’Leary et al., 2011) intensively discusses the role of polychronicity in MTM structures. Similarly, I expect that a strong polychronic culture and high levels of IPO affect the functioning of multiteaming. Hence, I asked the employees to indicate their agreement with four statements (Bluedorn et al., 1999) on individual (employee survey A; sample item: ‘I like to juggle several activities at the same time’) and collective polychronic orientation (employee survey C; sample item: ‘We like to juggle several activities at the same time’). Third, I controlled for additional types of organizational leadership, such as differentiated individual-focused leadership (i.e., leader behaviors directed at individuals; Kunze et al., 2016) and contingent-reward-leadership climate (i.e., leader behaviors rewarding individual performance; Kunze et al., 2016). Kunze et al. (2016) show that both measures are correlated with collective-focused leadership climate, but still enact separate effects on affective commitment climate. To control for potential confounding effects, I included seven items (sample item: ‘My direct supervisor shows respect for my personal feelings’) from the TFL scale (i.e., subscales ‘individualized consideration’ and ‘intellectual stimulation’) by Podsakoff et al. (1996) into employee survey B. In line with Kunze et al. (2016), I then calculated the coefficient of variation (Harrison & Klein, 2007) to obtain my measure of differentiated individual-focused leadership (cf. Kunze et al., 2016). Moreover, I adopted three items (employee survey B; sample item: ‘My direct supervisor always gives me positive feedback when I perform well’) from the contingent-reward leadership scale by Podsakoff et al. (1996) to measure contingent-reward-leadership climate (cf. Kunze et al., 2016).

4.4 Results

4.4.1 Descriptive statistics

Means, SDs, and intercorrelations among the variables are presented in Table 10. The average MTM level of the firms in my sample was 2.01 (Min=1.00; Max=6.18), which is comparable to study 2 of this dissertation.
<table>
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<th>Variables</th>
<th>Mean</th>
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<td>2. Industry: retail</td>
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<td>-23*</td>
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<td>3. Industry: service</td>
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<td>-36**</td>
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<td>-23*</td>
<td>-14</td>
<td>-36**</td>
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<td>5. Firm size (ln)</td>
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<td>6. Polychronic culture</td>
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<td>-.10</td>
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<td>.11</td>
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<td>7. Average level of IPO</td>
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<td>-.10</td>
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<td>8. Contingent-reward-leadership climate</td>
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<td>9. Differentiated individual-focused leadership</td>
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<td>11. Collective-focused leadership climate</td>
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<td>-.02</td>
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</table>

Note. N = 82 organizations (12720 employees, 82 HR representatives, 215 top managers). IPO = individual polychronic orientation. MTM = multiple team membership. POE = productive organizational energy.

* p < .05. ** p < .01.
Further investigations concerning the different industries in my sample show that multiteaming is relatively evenly spread across the production (mean MTM level = 2.01), retail (1.84), service (2.05), and finance industries (2.00). In line with my theoretical elaborations, there is no significant correlation between MTM level and POE. Interestingly, however, MTM level is positively and significantly correlated with the two measures of polychronicity (i.e. IPO and culture) as well as with integrated shared leadership. Finally, POE shows a positive and significant correlation with collective-focused leadership climate and integrated shared leadership, as well as with firm performance. This is in accordance with my hypothesized model (cf. Figure 12).

4.4.2 Hypotheses testing

Hypothesis 1 states that collective-focused leadership climate and integrated shared leadership jointly moderate the relationship between MTM level and POE. In particular, it is argued that the relationship is most positive in organizations, in which both types of leadership are strongly pronounced. To test this, I ran three linear multiple regressions (Dawson, 2014; cf. Table 11): in the first step, I included my set of control variables. In the second step, I added the predictor variable MTM level. Finally, in the third step, I additionally included both moderators (i.e., collective-focused leadership climate and integrated shared leadership) as well as the interaction terms (i.e., three two-way interactions and one three-way interaction). Consistently with hypothesis 1, I find that the MTM level by collective-focused leadership climate by integrated shared leadership three-way interaction entered in step 3 is positive and statistically significant (b = .24; p < .05). Although not part of my hypotheses, it is interesting to note that the inclusion of MTM level in step 2 led to a significant increase in variance explained (Δ R² = .04; p < .05). Furthermore, the coefficient of MTM level is positive and significant (b = .22; p < .05). Thus, it appears that MTM level has a positive effect on the climate of POE – at least, when I do not account for the impact of organizational leadership (cf. Table 11, step 3).
Table 11. Mediator model (study 3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Controls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry: retail</td>
<td>.03</td>
<td>.04</td>
<td>-.09</td>
</tr>
<tr>
<td>Industry: service</td>
<td>.26*</td>
<td>.28*</td>
<td>.17</td>
</tr>
<tr>
<td>Industry: finance</td>
<td>.18</td>
<td>.21</td>
<td>.04</td>
</tr>
<tr>
<td>Firm size (ln)</td>
<td>.10</td>
<td>.09</td>
<td>.11</td>
</tr>
<tr>
<td>Polychronic culture</td>
<td>-.23</td>
<td>-.31*</td>
<td>-.29**</td>
</tr>
<tr>
<td>Average level of IPO</td>
<td>.12</td>
<td>.12</td>
<td>.03</td>
</tr>
<tr>
<td>Contingent-reward-leadership climate</td>
<td>.21</td>
<td>.13</td>
<td>-.30</td>
</tr>
<tr>
<td>Differentiated individual-focused leadership</td>
<td>.27</td>
<td>.32*</td>
<td>-.21</td>
</tr>
<tr>
<td><strong>Predictor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level</td>
<td>.22*</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td><strong>Moderators and interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective-focused leadership climate</td>
<td>.92***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated shared leadership</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level × Collective-focused leadership climate</td>
<td>-.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level × Integrated shared leadership</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective-focused leadership climate × Integrated shared leadership</td>
<td>.25*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level × Collective-focused leadership climate × Integrated shared leadership</td>
<td>.24*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ∆ $R^2$ | .04* | .21*** |
| $R^2$   | .38  | .42    | .63    |
| Adjusted $R^2$ | .31  | .35    | .54    |

* $p < .05$. ** $p < .01$. *** $p < .001$.  

Note. Variables were mean-centered prior to analysis. Standardized beta coefficients are reported. Statistical tests are based on two-way tests. IPO = individual polychronic orientation. MTM = multiple team membership. POE= productive organizational energy.
To further investigate hypothesis 1, I plotted the three-way interaction by following the widely used procedure specified by Aiken and West (1991; see Figure 13). Moreover, I applied the slope difference test developed by Dawson and Richter (2006), in order to examine whether the pairs of individual slopes significantly differed from each other (cf. Table 11). As displayed in Table 11 (step 3), collective-focused leadership climate has a positive and significant main effect on POE ($b = .92; p < .001$). This also materializes in Figure 13, as lines 1 and 2 (i.e., high collective-focused leadership climate) are situated above lines 3 and 4 (i.e., low collective-focused leadership climate) at all MTM levels.

![Figure 13. Moderation plot (study 3)](image)

**Note.** Pair numbers correspond to the numbers listed in Table 12. Low (high) values are one SD below (above) mean values. MTM = multiple team membership. POE = productive organizational energy.

Comparing the different slopes in Figure 13, I find that an increasing prevalence of MTM in organizations has the most positive impact on POE, if both collective-focused leadership climate and integrated shared leadership are strongly pronounced ($m = .18; p < .05$; line 1 in Figure 13). This is in accordance with hypothesis 1. Interestingly, at high levels of collective-focused leadership climate and low levels of shared integrated leadership, an increasing MTM level
has a negative effect on POE ($m = -0.16; p < .05$; line 2 in Figure 13). This finding merits further attention and is discussed later. Both, the slopes of line 3 (i.e., low collective-focused leadership climate and high integrated shared leadership) and line 4 (i.e., low collective-focused leadership climate and low integrated shared leadership) are not statistically significant (cf. Figure 13 and Table 12).

### Table 12. Simple slopes comparisons for three-way interactions (study 3)

<table>
<thead>
<tr>
<th>Par closes of comparisons</th>
<th>POE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Slope</td>
</tr>
<tr>
<td>(1) Collective-focused leadership climate: high</td>
<td>.18</td>
</tr>
<tr>
<td>Integrated shared leadership: high</td>
<td></td>
</tr>
<tr>
<td>(2) Collective-focused leadership climate: high</td>
<td>-.16</td>
</tr>
<tr>
<td>Integrated shared leadership: low</td>
<td></td>
</tr>
<tr>
<td>(3) Collective-focused leadership climate: low</td>
<td>-.01</td>
</tr>
<tr>
<td>Integrated shared leadership: high</td>
<td></td>
</tr>
<tr>
<td>(4) Collective-focused leadership climate: low</td>
<td>.14</td>
</tr>
<tr>
<td>Integrated shared leadership: low</td>
<td></td>
</tr>
</tbody>
</table>

**Slope difference**

<table>
<thead>
<tr>
<th>Pair numbers</th>
<th>Slope difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) and (2)</td>
<td>2.73***</td>
</tr>
<tr>
<td>(1) and (3)</td>
<td>1.52</td>
</tr>
<tr>
<td>(1) and (4)</td>
<td>0.42</td>
</tr>
<tr>
<td>(2) and (3)</td>
<td>-1.55</td>
</tr>
<tr>
<td>(2) and (4)</td>
<td>-2.39*</td>
</tr>
<tr>
<td>(3) and (4)</td>
<td>-1.23</td>
</tr>
</tbody>
</table>

**Note.** Pair numbers correspond to the numbers listed in Figure 13. Slope difference tests were based on Dawson and Richter (2006). POE = productive organizational energy.

* $p < .05$.  *** $p < .001$.

Concerning the difference of pairs of slopes, I find that the slopes of line 1 (i.e., high collective-focused leadership climate and high integrated shared leadership) and line 2 (i.e., high collective-focused leadership climate and low integrated shared leadership) are significantly different ($t = 2.73; p < .001$), providing additional support to hypothesis 1. Furthermore, the slopes of line 2
(i.e., high collective-focused leadership climate and low integrated shared leadership) and line 4 (i.e., low collective-focused leadership climate and low integrated shared leadership) differ significantly. Finally, it is important to note that the slopes of line 3 (i.e., low collective-focused leadership climate and high integrated shared leadership) and line 4 (i.e., low collective-focused leadership climate and low integrated shared leadership) are not significantly different. This shows that, in the absence of a strong collective-focused leadership climate, integrated shared leadership has no impact on the MTM level – POE relationship. In all, I conclude that hypothesis 1 is strongly supported in my data.

Table 13. Outcome model (study 3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Firm performance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry: retail</td>
<td>-.03</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>Industry: service</td>
<td>-.00</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>Industry: finance</td>
<td>.10</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Firm size (ln)</td>
<td>.04</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>Polychronic culture</td>
<td>-.21</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Average level of IPO</td>
<td>-.01</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Contingent-reward-leadership climate</td>
<td>.38</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>Differentiated individual-focused</td>
<td>-.12</td>
<td>-.26</td>
<td></td>
</tr>
<tr>
<td>leadership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM level</td>
<td>.02</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Mediator</td>
<td></td>
<td>.45***</td>
<td></td>
</tr>
<tr>
<td>POE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ $R^2$</td>
<td>.12***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.15</td>
<td>.27</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.04</td>
<td>.16</td>
<td></td>
</tr>
</tbody>
</table>

Note. Variables were mean-centered prior to analysis. Standardized beta coefficients are reported. IPO = individual polychronic orientation. MTM = multiple team membership. POE = productive organizational energy. *** p < .001.
I now turn to hypothesis 2, which predicts that POE is positively related to firm performance. To test this, I ran two linear multiple regression models: first, I included my set of control variables and MTM level. Second, I added POE. As shown in Table 13, the inclusion of POE significantly increases the amount of variance explained ($\Delta R^2 = .12; p < .001$). Moreover, the coefficient of POE is positive and highly significant ($b = .45; p < .001$), thus providing support to hypothesis 2.

Finally, I examine the conditional indirect effect specified in hypothesis 3. In particular, it is stated that the relationship between MTM level and firm performance is jointly moderated by collective-focused leadership climate and integrated shared leadership and mediated by POE. Relative to all other combinations, I expect that the indirect effect should be most pronounced at high levels of both, collective-focused leadership climate and integrated shared leadership. Following recommendations by Preacher et al. (2007), I applied normal theory tests and bootstrapping in order to assess the significance of the conditional indirect effects (cf. Table 14). The normal theory tests of the indirect effect of MTM level on firm performance show that MTM level only has a positive and significant indirect effect on firm performance at high levels (i.e., $+1 \, SD$) of both, collective-focused leadership climate and integrated shared leadership. At all other combinations, the indirect effects are not statistically significant. Preacher et al. (2007, p. 213) suggest that normal theory tests “should be interpreted with some caution and, ideally, verified with bootstrapping”. Hence, I also used bootstrapping (10’000 bootstrap samples) to generate 95% confidence intervals for the magnitude of the indirect effects and assess significance via these. Again, only the confidence interval for high levels of collective-focused leadership climate and high levels of integrated shared leadership does not include zero, indicating a positive and significant effect (cf. Table 14). In sum, both normal theory tests and bootstrapping provide support to the moderated mediation effect formalized in hypothesis 4.
Table 14. Bootstrapping of conditional indirect effects (study 3)

<table>
<thead>
<tr>
<th></th>
<th>Values of collective-focused leadership climate</th>
<th>Values of integrated shared leadership</th>
<th>Conditional indirect effects</th>
<th>SE</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 1 SD (-.32)</td>
<td>- 1 SD (-.29)</td>
<td>.14</td>
<td>.13</td>
<td>-.04 to .56</td>
</tr>
<tr>
<td></td>
<td>- 1 SD (-.32)</td>
<td>Mean (.00)</td>
<td>.07</td>
<td>.08</td>
<td>-.05 to .28</td>
</tr>
<tr>
<td></td>
<td>- 1 SD (-.32)</td>
<td>+ 1 SD (.29)</td>
<td>-.01</td>
<td>.12</td>
<td>-.38 to .14</td>
</tr>
<tr>
<td></td>
<td>Mean (.00)</td>
<td>- 1 SD (-.29)</td>
<td>-.01</td>
<td>.09</td>
<td>-.18 to .17</td>
</tr>
<tr>
<td></td>
<td>Mean (.00)</td>
<td>Mean (.00)</td>
<td>.04</td>
<td>.05</td>
<td>-.03 to .20</td>
</tr>
<tr>
<td></td>
<td>Mean (.00)</td>
<td>+ 1 SD (.29)</td>
<td>.09</td>
<td>.07</td>
<td>-.03 to .26</td>
</tr>
<tr>
<td></td>
<td>+ 1 SD (.32)</td>
<td>- 1 SD (-.29)</td>
<td>-.16</td>
<td>.14</td>
<td>-.48 to .10</td>
</tr>
<tr>
<td></td>
<td>+ 1 SD (.32)</td>
<td>Mean (.00)</td>
<td>.01</td>
<td>.07</td>
<td>-.08 to .24</td>
</tr>
<tr>
<td></td>
<td>+ 1 SD (.32)</td>
<td>+ 1 SD (.29)</td>
<td>.18*</td>
<td>.11</td>
<td>.00 to .47</td>
</tr>
</tbody>
</table>

Note. Variables were mean-centered prior to analysis. Results are based on 10,000 bootstrap samples. Conditional indirect effect tests are two-tailed.

* p < .05.

In a nutshell, the results strongly support my conceptual model. First, they reveal that organizational leadership has a significant impact on the MTM level – climate of POE relationship. In line with the notion of a synergistic combination of hierarchical and shared leadership (Pearce et al., 2010), I find that high MTM levels yield the most positive effects on POE, if both collective-focused leadership climate and integrated shared leadership are strongly pronounced. Second, my results reveal that MTM level only has a significant and positive indirect effect on firm performance, if both hierarchical and shared organizational leadership are highly developed. Beyond findings specified in my hypotheses, I believe that particularly two outcomes are noteworthy: first, my analyses show that MTM level has a significant and positive effect on POE, if I do not account for the influence of organizational leadership (cf. step 2 in Table 11). Second, it is interesting to see that a combination of high levels of collective-focused leadership climate and low levels of integrated shared leadership yields negative effects on POE when MTM level increases (cf. line 2
in Figure 13). Both findings as well as further implications of my study are discussed below.

4.5 Discussion

The aim of this study was to gain first insights into the organizational leadership, climate, and effectiveness of MTOs. Rooted in social system perspective (Katz & Kahn, 1978), I conceptualized MTOs as social systems that consist of multiple subsystems (i.e., multiple teams), share a specific organizational climate, and strive for commonly shared goals. Moreover, I introduced a synergistic model of hierarchical and shared organizational leadership as an important boundary function of MTM structures (Katz & Kahn, 1978; Pearce et al., 2010), which helps to overcome coordination challenges (Mortensen et al., 2007) and fosters the motivational capacities of organizational multiteaming (Mortensen et al., 2007; O’Leary et al., 2011). I believe that my work holds several implications for organizational theory and practice.

4.5.1 Theoretical implications

Primarily, my paper advances research on MTM to the organizational level of analysis. In light of the findings of prior research (Barley et al., 2017; Cummings & Haas, 2012; Söderlund, 2015), I acknowledge that multiteaming is not limited to single departments anymore, but may become the only alternative for all employees in contemporary organizations. I introduced the term ‘MTO’ to refer to MTM structures at the system-level of an organization. Moreover, I addressed the theoretical underpinnings, consequences, and boundary conditions of organizational-level MTM structures, resulting in a number of intriguing theoretical implications.

First, I argue that research on MTM and other forms of contemporary collaboration (cf. Wageman et al., 2012) can strongly benefit from the ideas of social system perspective (Katz & Kahn, 1978). Various studies have called for
and pointed to the importance of addressing the firm-level conditions and consequences of MTM (e.g., Bertolotti et al., 2015; Mortensen et al., 2007; O’Leary et al., 2011). So far, however, those calls have remained mostly unexplored. As noted earlier, I believe that the lack of a sound theoretical framework represents the main reason for the non-existence of organizational-level multiteaming research. At the individual and team levels, the seminal study by O’Leary et al. (2011) has paved the way for a number of notable studies (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; Pluut et al., 2014). I would be intrigued, if my study had a similar effect on research at the organizational level of analysis. In particular, I believe that the conceptualization of multiple teams as subsystems of an organization is helpful in differentiating between lower-level (i.e., individual and team) and system-level effects. For example, the notion of subsystem imperfections (Katz & Kahn, 1978) points to the importance of managing the relationships between the multiple teams in a MTM structure. Since such processes obviously cannot be studied by focusing on single teams, social system perspective provides additional insights into the functioning of MTOs beyond simple aggregation of lower-level effects.

Second, by introducing the concept of POE, my study is the first to address the organizational climate in MTM structures. This advances extant research on multiteaming in two decisive ways: on the one hand, prior research has mostly focused on cognitive processes and states, such as attention, knowledge sharing, and learning (Bertolotti et al., 2015; Cummings & Haas, 2012; O’Leary et al., 2011). In contrast to this, my study comprehensively investigates the affective, cognitive, and behavioral dimensions of an organization’s climate. Pluut et al. (2014) demonstrate that single employees do not exclusively experience multiteaming in a cognitive manner, but also report affective and behavioral consequences, such as increased levels of work engagement or conflict with team members. In line with this, I argue that it is crucial to account for what Katz and Kahn (1978) referred to as the ‘human touch’ in social systems and comprehensively address affective, cognitive, and behavioral elements alike. By
referring to a multi-dimensional organizational climate concept such as POE (Bruch & Ghoshal, 2003), I hope to include this notion also at the system level of a MTO. On the other hand, I address calls by Wageman et al. (2012) and examine how the design (i.e., MTM structure) and leadership affect the climate in contemporary organizations seen as a whole. Drawing on work by Katz and Kahn (1978), I acknowledge that organizations are open systems, in which all subsystems share specific organizational characteristics, such as a common organizational climate. In other words, I claim and provide evidence that structuring work as multiple teams does not only affect the processes and states in single teams, but also the overall climate in a MTO.

Third, my study is the first to explicitly address the topic of leadership in MTM structures. Prior exploratory work by Mortensen et al. (2007) recognizes that leadership is an important prerequisite for the functioning of MTM structures. Moreover, their study shows that project leaders in a MTM setting often do not find the time to engage in both, managerial tasks and project work. Although I believe that solving time shortage represents an important issue, it is only one of many challenges when it comes to leading MTM systems: should MTMs result in multiple (formal) leaders? How can organizations ensure that multiple leaders point into the same direction? How must leadership be designed, in order to best fulfill its coordinating and boundary functions (Katz & Kahn, 1978)? Albeit I do not claim that my study fully encompasses all of these questions, I believe that I made an important first step towards uncovering the interplay of structure and leadership in MTOs. Specifically, I proposed and empirically demonstrated that a combination of high collective-focused leadership climate (Kunze et al., 2016) and high integrated shared leadership (Pearce et al., 2014) yields favorable outcomes for a MTO’s climate and performance. This finding is in line with extant research arguing that leadership is most effective, if the leadership function is shared in a synergistic manner (Katz & Kahn, 1978; Pearce et al., 2010). In addition to this, my results strongly reject calls to fully abolish hierarchical leadership in contemporary organizations (e.g., Hamel, 2011). In contrast, I even found that organizations
that can rely on a strong hierarchical leadership function reported higher levels of POE at all MTM levels (cf. Figure 13). Meanwhile, the prevalence of integrated shared leadership turned out to only make a difference in organizations with high levels of multiteaming: Figure 13 shows that a combination of strong hierarchical leadership and low shared leadership yields negative effects on POE at increasing MTM levels. I believe that an explanation for this can be found in the challenges of leading MTM structures described above. Especially, an exclusive reliance on hierarchical leadership will unavoidably overstrain the time resources of formal leaders (Mortensen et al., 2007), resulting in either reduced content-related contribution or coordination activities. Furthermore, research on shared leadership demonstrates that the closer involvement of employees in daily project work gives them an edge over formal leaders in coordinating certain activities (Pearce & Conger, 2003). Katz and Kahn (1978) put forward similar arguments, as they propose that administration leadership may be most effectively performed by employees. In all, it appears that a strong collective-focused leadership climate is sufficient to provide direction and coordination in organizations mostly relying on single team memberships. When organizations are starting to adopt MTM structures, however, a leadership model, in which formal leaders provide direction (i.e., articulate a vision and foster collective goals) and the employees engage in emergent and shared coordination behaviors, seems to be more effective. I acknowledge, however, that further research is needed to substantiate these propositions.

Finally, my study reveals that the application of MTM structures does not only influence the effectiveness of single teams (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012), but also the performance of entire organizations. Contrasting motivational capacities and coordination challenges, I assumed that organizational multiteaming yields opposing effects on the climate and ultimately performance of organizations. Interestingly, my results show that MTM level is positively related to POE, if I do not account for the impact of organizational leadership (cf. Table 11, step 2). After inclusion of
collective-focused leadership climate and integrated shared leadership, however, I find that there is only a positive and significant indirect relationship between MTM level and firm performance, if both types of leadership are strongly pronounced (cf. Table 14). Hence, in line with prior research (Bertolotti et al., 2015; O’Leary et al., 2011; van de Brake et al., 2017), I conclude that the use of multiteaming is neither purely good, nor purely bad, but dependent on contextual factors – also at the organizational level of analysis.

4.5.2 Practical implications

Concerning organizational practice, I want to encourage organizations to make active use of MTM structures. In prior research, MTM has been shown to yield positive outcomes for individual employees and single teams. For example, an increasing number of team memberships fosters the employees’ engagement (Pluut et al., 2014). Moreover, single teams benefit from the various perspectives that multiteam workers bring along, thus enhancing team effectiveness (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012). Beyond that, my study demonstrates that also entire firms can profit from multiteaming. I believe that this has important implications, which organizational decision-makers should take into account when evaluating the pros and cons of a MTM structure. In this sense, Wageman et al. (2012) argue that the overall effectiveness of MTM structures cannot be evaluated by simply looking at individual or team-level outcomes. Rather, they point out that the success of one team may come at the loss of others. Therefore, Wageman et al. (2012, p. 310) advocate that it is crucial for organizations to consider how structural interventions affect the overall system of collaboration “seen as a whole”. In the present study, I took up these propositions and found support that organizational multiteaming indeed influences the way people generally feel, think, and act (i.e., climate of POE) in an organization (Bruch & Ghoshal, 2003). Drawing on this, I recommend that MTOs abolish (or at least complement) a narrow and transactional single-team-performance thinking and evaluate organizational success with more systemic criteria. Measures of the climate,
inter-team collaboration or conflict in MTOs may represent promising starting points.

Having emphasized the ‘bright side’ of MTM structure above, I am aware that there is also a ‘dark side’ that should not be overlooked by organizations. Rather than listing potential negative consequences (e.g., climate of conflict, reduced firm performance), however, I want to adopt a solution-oriented attitude. Prior research has uncovered a number of relevant boundary conditions for the functioning of multiteaming, such as external advice receiving and instant messaging use (Bertolotti et al., 2015), geographic dispersion (Cummings & Haas, 2012), and member interdependence (Maynard et al., 2012). Adding to this literature, my synergistic model of organizational leadership holds several practical implications for leaders in MTOs. First, I encourage (formal) leaders in MTOs to not withdraw from their leadership responsibilities in a ‘laissez-faire’ kind of way (Hamel, 2011). Although content-related participation in multiple projects may occupy a great deal of time (Mortensen et al., 2007), my results show that leaders should not fully pull back from their leadership duties. Rather, they should focus on a few core tasks, such as articulating a captivating vision and fostering the pursuit of shared goals across multiple teams (Kunze et al., 2016). Second, organizations are invited to strengthen the sharing of the leadership function across their multiple teams and employees (cf. Pearce et al., 2014). On the one hand, employees have to be trained in behaviors and strategies related to shared leadership (e.g., external team coaching; Carson et al., 2007). On the other hand, I advise organizational leaders to not consider shared leadership as a constraint of their own power, but rather as a complementary coordinating function (Pearce et al., 2010), which frees up resources and time to engage in exciting project work (cf. Mortensen et al., 2007). Third and last, practitioners just like researchers are well-advised to reconsider classical conceptualizations of leadership as an isolated process in single teams. Facing an increasing turn towards contemporary organizational designs such as MTOs (Barley et al., 2017), I join in with Wageman et al. (2012) and
recommend to look at the interplay of structure and leadership as system-level phenomena in organizations.

### 4.5.3 Limitations and directions for future research

Despite several strengths such as independent data sources for the main study variables (i.e., employee, HR, and TMT surveys), my study is subject to a number of limitations that have to be considered when interpreting the results. First, the companies in my sample were mainly small and medium-sized. I acknowledge that this may have worked in favor of my hypothesis concerning the development of a shared organizational climate. Further research is needed in order to investigate whether MTM structures also influence the overall climate of larger organizations. Second, the application of a cross-sectional design limits the extent to which causal conclusions can be drawn. Nevertheless, I believe that I provided strong theoretical arguments for a causal structure-climate-performance link (Katz & Kahn, 1978). Third, I am aware of the drawbacks of subjective performance measures (Starbuck, 2004). However, the nature of my sample (i.e., mostly SMEs, which are not subject to detailed disclosure laws) prevented me from collecting such data. That being said, I believe that benchmarking the performance scale represents a reasonable alternative (Kunze et al., 2011; Rogers & Wright, 1998). Fourth, I acknowledge that I am not able to fully depict and control for the interplay between the multiple teams in the organizations I studied. Given the current state of research on organizational multiteaming as well as my primary interest in the climate and performance consequences of MTM structures, however, I assume that this is acceptable. Nevertheless, I invite future research to take a closer look at the processes and dynamics leading to a specific climate in MTOs.

Beyond limitations, my work offers promising directions for future research. First, I recommend that future research investigate the adoption of MTM structures over time. As a starting point, it might be interesting to investigate the introduction and subsequent use of organizational multiteaming in a qualitative study. How are collaboration processes affected over time? Which
specific events or points in time hold increased potential for conflict? How does
the climate in such organizations evolve over time? Furthermore, quantitative
research could examine the relationship between multiteaming experience (i.e.,
time of exposure to MTM structures) and various outcome variables at the
individual, team, and organizational levels (e.g., satisfaction, performance, and
well-being). Second, I invite scholars to uncover important boundary conditions
in MTOs beyond organizational leadership. For example, structural elements
(e.g., centralization, formalization, procedural landscapes), HRM practices (e.g.,
reward systems, handling of overtime) and organizational culture (e.g.,
polychronicity; Bluedorn et al., 1992) may represent valuable constituents of
effective MTM structures. Finally, I repeat calls for multilevel research on MTM
(Bertolotti et al., 2015; O’Leary et al., 2011). In particular, I claim that modern
multilevel methods (Klein & Kozlowski, 2000) are capable of grasping what
happens in and between teams in a MTM structure, posing questions such as: is
it worthwhile and even possible to maximize the performance of all teams in a
MTO? How can employee needs, team effectiveness and organizational
performance be balanced (Mathieu et al., 2008)? Which decision logic should
organizations follow in the resource allocation process, in order to come up with
optimum solutions? I am intrigued by the amount, versatility and significance
of open questions concerning MTM. In light of this, I anticipate that the studies
we have seen so far (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012;
Maynard et al., 2012; Mortensen et al., 2007; O’Leary et al., 2011; Pluut et al.,
2014) may only represent the foundation of an upcoming plethora of
multiteaming research.
5 Overall discussion

In the last chapter of this dissertation, I summarize, discuss and comprehensively integrate (cf. Figure 14) the findings and implications of the three studies (chapters 2, 3, and 4). Moreover, I place a strong emphasis on the deduction of practical recommendations and describe several levers for an expedient application of multiteaming in organizational practice. Finally, I present overall limitations of my conceptual and methodological proceedings and propose directions for future research.

5.1 Summary

In the beginning of this dissertation, I introduced MTM as an organizational phenomenon, which steadily gains in importance (e.g., Mortensen et al., 2007; O’Leary et al., 2011) and affects organizations at multiple levels (i.e., the individual employee, single teams, and the organization seen as a whole). Due to prior research’s focus on the team-level consequences of multiteaming (Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; O’Leary et al., 2011), I decided to particularly focus on the individual and organizational levels: (RQ1) what are the implications of organizational multiteaming for both, individual employees and entire organizations? Moreover, acknowledging the twofold nature of MTM, I aimed at identifying boundary conditions that enable the smooth and integrative functioning of multiteaming: (RQ2) what can organizations do to seize the positive, while avoiding the negative consequences of MTM structure? Following an extensive review of extant literature, I identified and presented research gaps as well as potential contributions of my work. Based on this, I conducted three independent studies, which respectively address a set of specific questions, but also contribute to the overall research questions in an additive fashion.
5.1.1 Integration of research findings

Study 1 was concerned with the positive (i.e., role integration) and negative (i.e., role strain) consequences of holding multiple roles in multiple teams, as well as with the influence of IPO as an important prerequisite for successful multiteamers. I elaborated on a theoretical framework that depicts the role-theoretical consequences of holding multiple roles in multiple teams at different levels of IPO (cf. Figure 6). Based on processes of inter-role and person-role conflict (Rizzo et al., 1970), I proposed and provided evidence that polychronics are the better multiteamers (i.e., perceive lower levels of role conflict and report higher levels of performance, satisfaction, and well-being).

In study 2, I moved to the organizational level of analysis and addressed the interplay and consequences of MTM level and heterogeneity for intra-organizational connectivity (i.e., organizational social capital; O’Leary et al., 2008). Drawing on social capital theory, I found that an increasing MTM level only yields positive effects on organizational social capital and firm performance, if MTM heterogeneity is low. In other words, if employees develop heterogeneous patterns of collaboration due to varying numbers of team memberships, they lack the trust and identification that is necessary to build effective networks. I believe that study 2 hold several important implications for multiteaming, but also for research on organizational diversity (i.e., diversity based on ‘how we work’; cf. chapter 5.2.3).

Study 3 dealt with the organizational leadership (i.e., collective-focused leadership climate and integrated shared leadership), climate (i.e., POE) and effectiveness (i.e., firm performance) of MTOs. Drawing on social systems perspective, I conceptualized MTOs as social systems, which use multiple teams (i.e., subsystems) in order to exploit the motivational capacities of organizational structure (Katz & Kahn, 1978). Based on this framework, study 3 highlighted the importance of a synergistic combination of hierarchical and shared organizational leadership in MTOs. Only those organizations, in which
the leadership function is shared among formal leaders and employees, reported positive effects on POE and performance at increasing MTM levels.

As stated in the introduction, I consider this dissertation as an overall package of extensions of prior multiteaming research: concerning theory, I applied role integration (Callero, 1994; Caza & Wilson, 2009), strain (Goode, 1960), and transition (Ashforth et al., 2000) theories, social capital theory (Leana & van Buren, 1999), and a social system perspective (Katz & Kahn, 1978) to the field of MTM research. Concerning dimensionality, I introduced and provided evidence for two firm-level dimensions of multiteaming (i.e., MTM level and heterogeneity). Moreover, to the best of my knowledge, study 2 of this dissertation is the first study to explicitly address interaction effects between different dimensions of MTM. Concerning level of analysis, I moved research on MTM to the firm-level (studies 2 and 3) and added valuable insights to extant research on individual multiteaming (study 1). Concerning moderators, I theoretically elaborated on the role of IPO and organizational leadership (i.e., collective-focused leadership climate and integrated shared leadership) in MTM structures and provided empirical evidence for their importance. Concerning mediators, the three studies respectively referred to perception of role conflict, organizational social capital and POE as exploratory mechanisms of the MTM-performance link. Figure 14 summarizes the contributions of the present dissertation and integrates its main findings.
Overall summary and integration of research findings

Figure 14. Overall summary and integration of research findings

Note. MTM = multiple team membership. POE = productive organizational energy. IPO = individual polychronic orientation.
5.1.2 Answers to research questions

Having integrated the findings of the three studies, I want to present a concise answer to my overall research questions. With regard to research question 1, my dissertation reveals that MTM has wide-ranging implications for both, individual employees (i.e., perception of role conflict) and organizations seen as a whole (i.e., intra-organizational connectivity and climate of POE). That being said, it is impossible to speak of individual and organizational multiteaming as ‘positive’ or ‘negative’ without taking boundary conditions into account. As formalized in research question 2, I thus addressed potential moderators of the MTM-outcome link at the individual and organizational levels. Thereby, the results demonstrate that high levels of IPO represent an important asset for individual multiteamers. Moreover, I found that the design of MTM structure (i.e., low levels of MTM heterogeneity) and a combination of hierarchical and shared organizational leadership are crucial determinants of the firm-level effectiveness of multiteaming systems.

5.2 Main theoretical implications

In the past decade, several studies have hinted at the changing nature and increasing complexity of team structures (e.g., Mathieu et al., 2008; Mathieu et al., 2013; Mortensen, 2014; Tannenbaum et al., 2012; Wageman et al., 2012). Facing this changing ecology of teams (Wageman et al., 2012), Mathieu et al. (2008, p. 441) argue that “greater scrutiny should be devoted to the construct validity” of team composition variables. Meanwhile, Wageman et al. (2012, p. 312) propose to relax classical team definitions and explore “what is interesting in contemporary collaboration [italics removed]”. Although the two statements appear to be contradictory, I strongly agree with both of them. On the one hand, I believe that research needs to acknowledge the changing nature of teams and account for phenomena like MTM. Obviously, this requires letting go of entrenched team conceptualizations, such as “typically stable, usually full-time, and well-defined” (Cohen & Bailey, 1997, p. 242). On the other hand,
Overall discussion

however, extant research (e.g., Mortensen, 2014; O’Leary et al., 2011; Wageman et al., 2012) and the dissertation at hand also demonstrate that it is important to closely define and distinguish the multiple facets, conditions, and consequences of contemporary collaboration.

In all, I propose that research on MTM and related concepts does not shut off to developments in organizational practice (although they may be complex and difficult to measure; Mathieu et al., 2008), while maintaining the high levels of conceptual and methodological rigor that are needed to produce reliable and valuable results. Throughout this dissertation, I stumbled upon a number of such conceptual and methodological challenges related to the study of MTM. Some of them have already been presented in the discussions of the three studies (cf. chapters 2.5.1, 3.5.1 and 4.5.1). To avoid repetition, the chapters below rather deal with theoretical implications at the macro-level. In this sense, I discuss the overall implications of the three studies in an integrated and holistic fashion and focus on a selection of core aspects. Thereby, I first elaborate on two challenges related to the conceptualization and study of organizational multiteaming. Second, I engage in a conceptual demarcation of team-level and organizational effects of MTM. Finally, I take up and advance my arguments related to diversity based on ‘how we work’ (cf. chapters 3.2.3 and 3.5.1).

5.2.1 Multidimensionality and theoretical complexity in MTM research

The first challenge is related to the multidimensionality of MTM. In this vein, the present dissertation once again (cf. O’Leary et al., 2011) underlined that MTM represents a multidimensional concept. In other words, I claim that studying the (average) number of team memberships is not sufficient to entirely grasp the consequences of the phenomenon. In addition to the dimensions already defined in prior research (i.e., number and variety of MTM, percentage of time spent on core team, and fragmentation of time across teams), I introduced and put a spotlight on two firm-level dimensions of multiteaming: MTM level and heterogeneity. This shows that the different facets of multiteaming vary across levels of analysis. Furthermore, study 2 of this
dissertation was the first to investigate interaction effects between two dimensions of multiteaming, yielding intriguing results. Without trying to diminish the findings of prior research, I believe that integrating multiple dimensions of MTM into single studies or even measures (e.g., fragmentation of time across teams; cf. study 1) as well as accounting for interaction effects will significantly increase the explanatory power of multiteaming research. Moreover, I urge future research to precisely state and define the dimension(s) of MTM that are studied. This will help MTM scholars to keep an overview of this growing field of research and to avoid construct fuzziness and overlaps.

The second challenge arises from the theoretical complexity of organizational multiteaming. Already Mortensen et al. (2007) noted that MTM includes various theoretical implications for individuals, teams, and organizations. In line with this, multiteaming has been studied through the lenses of network, knowledge, and attention theories (Bertolotti et al., 2015; Cummings & Haas, 2012; O’Leary et al., 2011), a job-demands and resources framework (Pluut et al., 2014), and a challenge and hindrance framework (van de Brake et al., 2017). Adding to this literature, I introduced role theory (Ashforth et al., 2000; Callero, 1994; Goode, 1960), organizational social capital theory (Leana & van Buren, 1999), and social systems perspective (Katz & Kahn, 1978) to research on MTM. Frankly speaking, almost every study on multiteaming applied a different theoretical perspective, thus pointing to a wide variety of facets and consequences of the phenomenon. What is unique to all of this research, however, is its simultaneous focus on positive as well as negative consequences. Bertolotti et al. (2015) and O’Leary et al. (2011) argued that MTM increases access to knowledge and networks, but concurrently reduces attention. Pluut et al. (2014) proposed that multiteaming increases individual job resources, but also enhances job demands. Moreover, van de Brake et al. (2017) found that multiteaming may be considered as challenge or hindrance by the employees. Beyond that, I contrasted two opposing role-theoretical effects (i.e., role strain versus accumulation) of individual fragmentation of time, resulting in either increased or reduced perception of role conflict. Drawing on social system perspective, I
described the twofold consequences of increased MTM level for an organization’s climate (i.e., motivational capacities versus coordination challenges). Finally, although not explicitly addressed in study 2, prior research argues that also the returns of social capital investment are finite: “[a]s with physical capital, over-investment in social capital can transform a potentially productive asset into a constraint or liability” (Adler & Kwon, 2000, p. 106). Thus, it is plausible to assume that the positive effect of MTM level on intra-organizational connectivity established in study 2 may eventually turn negative, too.

In all, MTM is not only complex with regard to theoretical versatility, but also seems to be subject to the “too-much-of-a-good-thing effect” (TMGT effect), which refers to “ordinarily beneficial antecedents causing harm when taken too far” (Pierce & Aguinis, 2013, p. 314). Therefore, I urge research on multiteaming to explicitly state and thoroughly elaborate on its underlying theories, as well as account for potential curvilinear effects (cf. O’Leary et al., 2011) and boundary conditions. Furthermore, I suggest that future work tries to provide answers to the question of ‘how many teams are too many’. For example, Bertolotti et al. (2015, p. 918) found that the “value of MTM corresponding to the highest level of performance is about 9” in a sample of an Italian R&D unit. More nuanced explorations into this essential question are likely to result in intriguing insights – particularly with regard to resource allocation decisions in organizational practice.

5.2.2 Team or organization: towards a demarcation of levels of analysis

Due to conceptual work by O’Leary et al. (2011), research on multiteaming has a relatively clear understanding of the individual-level and team-level effects of number of MTM, as well as their demarcation. Concerning the differences between team- and organizational-level effects, however, we know relatively
little\textsuperscript{17}. In an attempt to overcome this lack of clarity, study 2 and study 3 of this dissertation addressed the firm-level consequences of multiteaming by referring to perspectives of social capital (Leana & van Buren, 1999) and social systems (Katz & Kahn, 1978), respectively. Although both studies involved single-level models only (i.e., the organization), I inevitably had to deal with the differences between team- and firm-level effects in MTM structures. Since cross-level differentiation was not the focus of the two studies, however, I did not engage in in-depth elaborations on this topic. That being said, I believe that future research can strongly benefit from a framework that contrasts the general differences between the two levels of analysis and provides us with respective vocabulary. Below, I integrate the main ideas on the firm-level consequences of MTM presented in studies 2 and 3, and expand those by contrasting them to team-level effects (O’Leary et al., 2011). The result of my efforts is a foundational demarcation of exchange processes that occur within and between teams in MTM structure (cf. Figure 15).

In general, I differentiate between \textit{intra-team} and \textit{inter-team} exchange processes. Fiore, Salas, Cuevas, and Bowers (2003) make a similar distinction, but refer to the intra-team level as inter-individual. For illustrative reasons, I will explain my framework in reference to the exchange of knowledge within and between teams. The exchange of knowledge, information, and the like has been argued to be a critical element of MTM structure (e.g., Bertolotti et al., 2015; O’Leary et al., 2011). That being said, I want to emphasize that my model can also be applied to the exchange of other resources, such as emotions (i.e., intra-team and inter-team conflict), political resources (i.e., intra-team and inter-team politicking), and the like. In chapter 3.2.2, I have provided a detailed discussion of the resources that are accessible through MTM structure.

\textsuperscript{17} A conference paper by O’Leary et al. (2008) represents a single exception to this. The authors provide initial ideas on the organizational-level effects of multiteaming. However, they do not engage in a discussion of respective boundaries to other levels of analysis.
Figure 15. Demarcation of intra- and inter-team processes

Note. To avoid over-complexity, only three teams are depicted. MTM = multiple team membership.

In line with Fiore et al. (2003), I conceptualize intra-team processes as the exchange activities that occur (between the individuals) within a single team. Meanwhile, inter-team processes refer to all exchange activities that occur between teams in a system of collaboration (e.g., MTM structure), such as particularly inside-out and outside-in processes. Inside-out processes describe the dissemination of knowledge (and other resources) from one team to the system of collaboration. Contrarily, the integration of knowledge (and other resources) from the system of collaboration into the focal team are denoted outside-in processes. It is important to note that intra-team processes do not vary from single-team-membership structures to MTM structures. However, they are significantly affected by an increased magnitude of inter-team exchange processes in MTM structures (i.e., intra-organizational connectivity; cf. study 2 and O’Leary et al., 2008). For instance, intra-team knowledge exchange may
benefit from or, at a certain threshold, be harmed by higher levels of knowledge exchange between teams (O’Leary et al., 2011).

By definition, intra-team processes only affect single teams. In contrast, inter-team processes affect single teams and the system of collaboration seen as a whole (e.g., the organization). Consider the following example: an individual is part of three teams (A, B, and C). S/he ‘exports’ knowledge from team A (i.e., inside-out process) and imports this knowledge into teams B and C (i.e., outside-in process). Obviously, outside-in processes benefit the single teams B and C, as knowledge is integrated into those teams. Meanwhile, inside-out processes per se do not affect any single team, but simply imply that knowledge is disseminated out of a team into the system of collaboration. As described in study 2, such knowledge sharing is helpful in creating awareness of the activities of other teams throughout the entire system, and thus helps to gain faster access to expert knowledge and to reduce redundancy in activities across the organization (O’Leary et al., 2008). O’Leary et al. (2008) referred to such processes also as built-in boundary spanning capacities.

To better illustrate those processes, Figure 16 contrasts three MTM systems that are connected via varying levels of ‘membership interdependence’ (O’Leary et al., 2012). In scenario 1, all three teams share team members (i.e., high MTM levels), resulting in direct links between all teams (i.e., high levels of intra-organizational connectivity). In scenario 2, team B shares members with team A and team C. The latter two, however, are not directly connected. Finally, scenario 3 illustrates a single-team-membership structure, in which all teams are unconnected with regard to team memberships. Since membership in teams results in trust and interaction with other team members (e.g., Hackman, 1987), it is plausible to assume that the flow of information between team A and team C will be most efficient in scenario 1. Meanwhile, in scenario 2, team C can only indirectly access information on the activities of team A via team B. Finally, there is no information exchange between teams A, B, and C via shared team membership. In all, I conclude that the entire system of collaboration directly benefits from higher levels of intra-organizational connectivity, if MTM level
increases. In turn, those effects may be conveyed to the team-level via outside-in processes (i.e., knowledge integration).

![Diagram showing three scenarios of MTM systems at different levels of connectivity.](#)

**Scenario 1.**

![Diagram showing team connections](#)

**Scenario 2.**

![Diagram showing team connections](#)

**Scenario 3.**

![Diagram showing team connections](#)

*Figure 16. MTM systems at different levels of connectivity*

*Note.* To avoid over-complexity, only three teams are depicted in each scenario. MTM = multiple team membership.

Beyond inside-out and outside-in processes, inter-team processes also comprise activities, which include that employees distribute their *time resources between teams*. For instance, organizations profit from an increased resource utilization and flexibility (O’Leary et al., 2011), as employees’ time resources can be reprioritized between teams in real time according to project or customer needs. Similarly, organizations may also benefit from a natural selection of successful project, as employees will shift their time resources to teams, which they
perceive as promising and worthwhile, while withdrawing their attention from teams that are doomed to fail (O’Leary et al., 2008). As demonstrated in study 3, however, it is important that organizational leadership coordinates multiteam allocation processes. If this is not the case, conflicts between teams may foster a corrosive and unproductive climate.

Wageman et al. (2012, p. 312) recommend that research on new forms of collaboration “consider[s] novel contexts and embrace[s] description”. In this sense, I integrated the theoretical and empirical results of studies 2 and 3, in order to describe a framework that accounts for an increasing “interconnection with other teams and the broader environment”. I hope that future research builds on this framework (cf. Figure 15), in order to advance our understanding of the differences between team-level and organizational-level effects of multiteaming.

5.2.3 MTM heterogeneity: a new type of diversity

Finally yet importantly, I want to come back to the phenomenon of MTM heterogeneity. In study 2, I have introduced and defined MTM heterogeneity as the deviation in the number of team memberships held by the individuals within a specific unit, such as an organization, a department or a team. Drawing on work by Broschak and Davis-Blake (2006) and Reskin (2003), I argued that heterogeneity in the number of team memberships produces diversity in employee work patterns, thus reducing trust and identification. Moreover, I provided empirical evidence that MTM heterogeneity negatively affects the levels of organizational social capital in 85 firms. In line with a study on part-time and temporary work by Broschak and Davis-Blake (2006), my dissertation shows that the changing nature of work and collaboration indeed has the potential to cause diversity-like effects that are comparable to those of ascriptive demographic differences (cf. also Reskin, 2003). In the following, I discuss this ‘new type of diversity’ in a broader context and extend my elaborations concerning the classification among extant diversity taxonomies.
Technological advancements and an increasing focus on flexibility have produced multiple types of ‘new’ work arrangements (e.g., Barley et al., 2017), ranging from part-time and temporary work (e.g., Broschak & Davis-Blake, 2006) to offsite work and telework (e.g., Rockmann & Pratt, 2015), and to new forms of team collaboration (e.g., multiteaming; O’Leary et al., 2011; Wageman et al., 2012). While organizational research and practice are excited about these developments and actively experiment with new forms of work and collaboration, it is important to bear in mind that ‘contemporary’ and ‘classical’ work (still) coexist in most firms (Rockmann & Pratt, 2015). This has multiple reasons: confidentiality obligations and intellectual property issues may pose legal barriers in some areas of an organization (O’Leary et al., 2011). Some firms may decide to ‘prototype’ new work arrangements in selected departments (e.g., R&D departments; Bertolotti et al., 2015). Organizational structures and decision-making processes may not be adaptive enough to ensure an organization-wide introduction of new work arrangements. Furthermore, some employees may prefer to remain in ‘classical’ work arrangements. Rockmann and Pratt (2015) provide evidence to a coexistence of ‘contemporary’ and ‘classical’ work arrangements in a study on onsite and offsite work. Similarly, study 2 of this dissertation shows that single-team-membership and MTM coexisted in almost all of the 85 organizations studied. In sum, diversity based on how employees work appears to be much more prominent in organizational practice than expected. In contrast, however, research on such heterogeneity is very limited and fragmented across different research fields (e.g., Broschak & Davis-Blake, 2006; Rockmann & Pratt, 2015). Therefore, I believe that future research can strongly benefit from conceptual work that integrates diversity based on ‘how we work’ into frameworks of prior research.

In study 2, I argued that it is difficult to classify MTM heterogeneity and the like (i.e., onsite versus offsite work, part-time versus full-time work, etc.) according to existing diversity taxonomies (e.g., Harrison et al., 1998; Jackson et al., 2003; Pelled, 1996). Although those frameworks help to structure wide parts of extant diversity research, they are not capable of grasping the specific nature of MTM
heterogeneity. Hence, I proposed a new bipolar taxonomy that distinguishes between diversity based on ‘who we are’ and diversity based on ‘how we work’. Diversity based on ‘who we are’ refers to classical diversity research on differences that employees ‘bring to work’ (e.g., age, gender, ethnicity, attitudes, beliefs, and values; Harrison et al., 1998). Meanwhile, diversity based on ‘how we work’ refers to differences that employees ‘obtain at work’ (e.g., varying numbers of team memberships). In addition to this, I suggested to partition diversity based on ‘how we work’ into surface-level and deep-level phenomena. Whereas Broschak and Davis-Blake (2006, p. 375) reported that “[m]any organizations assign temporary workers distinctive markers, such as specially colored uniforms, hardhats, or identification badges, making them conspicuous and easily distinguishable” (i.e., surface-level diversity), I argue that MTM heterogeneity is not visible at first sight. Rather, the effects of MTM heterogeneity are likely to evolve over time based on diverse patterns of collaboration (i.e., deep-level diversity).

![Figure 17. A new taxonomy for organizational diversity research](image)

*Note. MTM = multiple team membership. Examples in boxes are illustrative and not conclusive.*
Figure 17 integrates both taxonomies. Moreover, it provides examples for all four potential combinations, thus integrating different facets of diversity based on ‘how we work’ into a unique umbrella-like framework. I hope that my conceptual propositions help to unite already existing research on this new type of diversity. Moreover, I urge future research to not exclusively focus on the average use of contemporary work and collaboration, but also consider potential heterogeneity-based consequences.

## 5.3 Main practical implications

“There is nothing more practical than a good theory”, Kurt Lewin (1952, p. 169) once said. In this sense, I strongly believe that any research on organizational behavior should ultimately result in hands-on implications, suggestions, and guidelines for organizational practice. Thus, in this chapter, I engage in a solution- and action-oriented discussion of overall practical implications beyond recommendations made in the single studies (cf. chapters 2.5.2, 3.5.2 and 4.5.2). Thereby, I first present two opposing scenarios of the consequences of organizational multiteaming. Then, I explain multiple levers for exploiting the positive while avoiding the negative consequences of MTM.

### 5.3.1 Network organization or ‘accumulation of isolated resources’?

There are several reasons for the adoption of MTM structures in organizational practice. As noted in prior research, organizational decision-makers may be driven by high levels of resource utilization and flexibility (O’Leary et al., 2011), increased knowledge transfer and knowledge integration in teams (Bertolotti et al., 2015; O’Leary et al., 2011), and the need to innovate (Bertolotti et al., 2015). Furthermore, as outlined in this dissertation, organizations may want to seize the motivational capacities of MTM structure (cf. also Mortensen et al., 2007), increase the levels of intra-organizational connectivity (cf. also O’Leary et al., 2008) and stimulate the personal development of their employees. In all, the best-case scenario of multiteaming is to shake up entrenched organizational
structures and create multi-coupled, high-performing network organizations (e.g., Söderlund, 2002). The three studies of this dissertation indeed provide support to these aspirations: study 1 shows that the performance, satisfaction and well-being of rather polychronic individuals are enhanced by an increasing fragmentation of time across multiple teams. Moreover, studies 2 and 3 reveal that MTM structure fosters intra-organizational connectivity and a dynamic organizational climate, thus increasing firm performance. Is it therefore reasonable to speak of MTM as an outright beneficial HRM practice?

Despite of numerous potential benefits, a closer look at the results of my dissertation reveals that a purely positive view on multiteaming is one-sided and may even be dangerous. First, rather monochronic employees suffer from high levels of role conflict in MTM situations. On the one hand, they face problems when it comes to juggling the various role expectations of different teams. On the other hand, distributing time across multiple teams does not meet their personal preferences, ultimately resulting in lower levels of performance, satisfaction and personal well-being. Second, a strong variance in the number of team memberships across an organization (i.e., MTM heterogeneity) may provoke diverse collaboration patterns among employees and thus reduce shared trust and identification. I referred to this as diversity based on ‘how we work’ and demonstrated that such heterogeneity yields negative effects on intra-organizational connectivity and firm performance. Finally, MTOs also face complex coordination challenges, which primarily arise from subsystem imperfections, such as the relationship and interplay of the single teams. If a strong organizational leadership function does not compensate for such imperfections in formal MTM structure, firms face negative effects on POE and ultimately performance. Taken together, MTM structure can also result in a situation, in which individuals collaborate contrary to their individual preferences, do not identify with and trust their co-workers, and are overburdened by coordination challenges and conflict. I refer to this worst-case scenario of multiteaming as ‘accumulation of isolated resources’. That is, individuals cannot identify with the way they work and with whom they work.
Moreover, the organization seen as a whole is characterized by isolation and conflict, rather than inter-connectivity and collaboration. 

*Where there is light, there must be shadow* (Goethe, 1773). This proverb also seems to hold for organizational multiteaming. Yet, while the physical causality between light and shadow rests on natural laws and is therefore unavoidable, organizations have multiple levers at hand through which they can influence the consequences of MTM structure. Subsequently, I concisely present the main levers that were identified within this dissertation (cf. Figure 18) and make recommendations as to how they can reasonably be implemented.

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**Main levers to design effective MTM structures**

**Lever 1:** Balance individual, team, and organizational needs

**Lever 2:** Use flexible and inter-team performance criteria

**Lever 3:** Account for multiteaming skills and preferences

**Lever 4:** Avoid MTM-based heterogeneous work patterns

**Lever 5:** Adjust formal and foster shared leadership

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*Figure 18. Main levers to design effective MTM structures*

*Note. MTM = multiple team membership. MTO = multiteam organization*

### 5.3.2 Lever 1: balance individual, team, and organizational needs

According to Mathieu et al. (2008, p. 442), organizational research and practice should pay close attention concerning “how to best balance team composition needs with the desire to develop individual members”. Adding to this
statement, my dissertation shows that organizations must also consider firm-level consequences of team composition decisions, because single team performance need not automatically translate into overall organizational effectiveness (Wageman et al., 2012). Especially the introduction of a multidimensional and twofold structural concept, such as MTM, requires a holistic analysis of potential consequences at different levels. So far, research has not simultaneously addressed the effects of multiteaming for individuals, teams, and organizations in a unique study. Hence, we know relatively little concerning the joint effectiveness of MTM for single employees and teams as well as the organization seen as a whole. Nevertheless, I believe that the theoretical elaborations and empirical findings of the present dissertation allow us to draw first conclusions. For example, from the perspective of single employees, it appears to be a worthwhile decision to assign polychronic individuals to a higher number of teams than their monochronic counterparts. As revealed in study 1, personality-based allocation decisions increase person-job fit and ultimately individual prosperity at work. That being said, however, such a team composition strategy may also produce MTM heterogeneity at the team and organizational levels, thus reducing trust, identification and the creation of organizational networks. This represents just one of many potential conflicts in team allocation decisions. Therefore, I recommend that organizational decision-makers adopt a holistic perspective when discussing multiteam allocation decisions. Although it may be impossible to fully balance individual, team, and organizational benefits of MTM, awareness of potential side effects allows implementing appropriate countermeasures from the outset.

5.3.3 Lever 2: use flexible and inter-team performance criteria

Coherent with the need to balance the consequences at multiple levels (lever 1), organizational decision-makers are well advised to rethink the validity of classical team performance criteria in MTOs. Particularly in study 3, I discussed the importance of distinguishing collaboration within teams from collaboration between teams. In other words, the success of a single team in a MTM structure
is likely to be accompanied by the failure of other teams and may even come at the loss of the entire organization (Wageman et al., 2012). That being said, I do not recommend that organizations fully abandon team-level performance evaluations. Rather, I suggest complementing already existing single-team performance indicators with criteria that measure the connectivity, effectiveness, and innovativeness of entire networks of teams. Research on network theory offers a wide range of measures that can be used to evaluate the success of single individuals and teams in social networks (e.g., centrality) as well as the overall effectiveness (e.g., density) of entire systems of collaboration (e.g., Borgatti et al., 2009; Borgatti & Halgin, 2011; Kadushin, 2012). In addition to this, it is important to accept that some teams or projects are not as successful or promising as others are. O’Leary et al. (2008) point out that a major advantage of firm-level MTM structure is the natural selection of successful projects. In this vein, I recommend that organizations develop performance criteria as well as an organizational culture that allows individuals in MTM structures to allocate their time to worthwhile projects and not stick to meticulous resource plans. This will eventually result in an environment, in which employees are driven by the will to succeed in exciting projects, instead of trying to prevent failure in projects that are doomed to fail (cf. Crowe & Higgins, 1997).

5.3.4  **Lever 3: account for multiteaming skills and preferences**

According to Lepak and Snell (2002, p. 526), successful HR configurations do not only encompass organizational and job design, but also the “recruitment and selection” as well as “training and development” of employees. In the context of MTM, Mortensen et al. (2007) note that especially the selection of the ‘right’ employees is an important issue (Mortensen et al., 2007). Building on this, the present dissertation shows that organizations should not exclusively focus on content-related criteria when selecting and developing multiteam workers. Although knowledge is highly valued in MTM settings (Bertolotti et al., 2015), the complex and fragmented nature of such environments also calls for skills that help to switch between multiple working spheres (González & Mark, 2005)
in a spontaneous and efficient fashion. In this sense, Mortensen et al. (2007) identified developable competencies, such as personal discipline, interpersonal competence, and time-management skills, as crucial qualities in MTM settings. Beyond criteria capable of development, however, my work also demonstrates that IPO – a stable personality trait (Conte et al., 1999) – represents a ‘game-changing’ asset of successful multiteamers. This has decisive implications for multiteam allocation decisions in organizational practice. First, it is important that resource allocation decisions account for individual time-management competencies and stable personal preferences (e.g., IPO) just as much as for content-related expertise. Second, organizational decision-makers have to be aware of the fact that neither all employees are suited for working in multiple teams, nor all employees can be trained to become successful multiteamers. Third, I encourage organizational leaders and resource planers to actively engage in conversations concerning the multiteam preferences of single employees. Study 1 as well as prior research (e.g., Cotte & Ratneshwar, 1999) show that individuals are well aware of their time preferences. In line with Bluedorn et al. (1992), I thus propose that organizations, which account for their employees’ multiteaming preferences, have an advantage over competitors – not only with regard to performance, but also concerning individual satisfaction and well-being at work.

5.3.5 Lever 4: avoid MTM-based heterogeneous work patterns

In study 2, I put a spotlight on the concept of MTM heterogeneity, which refers to the deviation in the number of MTM held by the employees within an organization. Moreover, I showed that such heterogeneity has a negative impact on the development of co-worker bonding and intra-organizational social capital. Similar to this, Broschak and Davis-Blake (2006) found that diversity in standard and nonstandard work arrangements (i.e., temporary and part-time work) has negative consequences for co-worker relationships and willingness to assist others. Facing an increased turn towards so-called ‘nonstandard’ (e.g., Broschak & Davis-Blake, 2006) or ‘contemporary’ (Wageman et al., 2012) forms
Overall discussion

of work and collaboration, I urge organizations to pay attention to a new kind of diversity that is based on *how we work*. As I have argued in study 2, diverse work practices lead to heterogeneous work patterns, which may ultimately reduce employee perceptions of shared identification and trust (Becker, 2004; Salvato & Rerup, 2011). Moreover, I assume that there is a potential risk of organizational faultlines (cf. Thatcher & Patel, 2012). On the one hand, it is possible that some employees accumulate various nontraditional work practices (e.g., part-time, telework, MTM), whereas others stick to traditional work (e.g., full-time, office-based, single team membership). On the other hand, there is also a risk that work practice-based diversity interacts with other types of diversity. For example, it is plausible to assume that old employees have developed strong routines in traditional work practices, which they do not want to change. Meanwhile, young employees are likely to be more inclined towards adopting modern and contemporary forms of collaboration.

I acknowledge that the present dissertation has not addressed diversity in forms of collaboration beyond multiteaming. Furthermore, my work did not include any analysis of faultlines as well as potential boundary conditions of such heterogeneity. Nevertheless, I recommend that organizations pay close attention to diversity based on how employees work, because awareness of potential problems represents an important first step towards developing respective solutions and countermeasures.

5.3.6 **Lever 5: adjust formal and foster shared leadership**

In the context of study 3, I conducted an interview with the head of HR of a global pharmaceutical company. Inter alia, he stated that his organization still assigns *formal* leaders to every team. That being said, he acknowledged that the daily leadership patterns are better referred to as *primus inter pares*. Drawing on these statements, I developed a system-level leadership model that integrates hierarchical (i.e., collective-focused leadership climate) and shared leadership (i.e., integrated shared leadership) in a synergistic manner. This
conceptualization as well as the respective empirical results hold multiple intriguing implications for the design of leadership in MTM structures.

Multiple teams need multiple leaders. Yet, this does not mean that organizations should assign one or multiple formal leaders to every team in a MTM structure. Rather, it implies that organizations should foster the development of shared leadership practices throughout entire systems of collaboration (Pearce et al., 2014). Building on social system perspective (Katz & Kahn, 1978), I explained that the relationships and interplay between the multiple teams in a MTM structure represent a critical source of structural imperfection and conflict. In other words, organizational strategy, rules, and procedures are not capable of grasping the fast-paced, complex and interrelated nature of inter-team transitions, which are necessary to fully exploit the potential of MTM structure. In the event of changes, individual employees need to be able to immediately decide on project priorities and reallocate their resources respectively. If they do so in an uncoordinated and disintegrated fashion, this will unavoidably result in conflict and foster a non-productive climate. If the employees engage in shared and integrated coordination behaviors (i.e., integrated shared leadership), however, the imperfection of MTM structure may be overcome.

When the employees take care of the inter- and intra-team coordination, should formal leadership be abolished? Indeed, popular research by Hamel (2011, p. 48) proposes to “fire all the managers”. Yet, the results of study 3 strongly reject such calls, as they reveal that organizations with strong hierarchical leadership outperform organizations with weak hierarchical leadership at all MTM levels. Nevertheless, I acknowledge that the classical role of formal leadership has to be adapted in MTM structure. Building on the notions of collective-focused leadership (Kunze et al., 2016) and leadership synergies (Pearce & Barkus, 2004), study 3 suggests that formal leaders should engage in behaviors that are complementary to the employees’ coordination activities. On the one hand, leaders have to articulate and communicate an inspiring vision, which provides a uniting objective to a system of multiple teams. On the other hand, leaders
have to foster collective goals. This strongly corresponds with the reconceptualization of performance criteria in MTOs, which I have described before (cf. lever 2). In this sense, it is important that formal leaders adopt a holistic view and consider the overall goals of MTM systems, rather than trying to increase the goal achievement of single teams in an isolated fashion.

What can organizations do to foster the development of shared leadership as well as create acceptance for ‘leadership through employees’ among formal leaders? Concerning the development of shared leadership behaviors, Carson et al. (2007) found that external coaching increases the level of shared leadership in teams. Furthermore, a team environment that consists of shared purpose, social support, and voice represents an important antecedent of shared leadership behavior (Carson et al., 2007). Thus, a strong collective-focused leadership climate (Kunze et al., 2016) may also help to foster shared leadership among employees. Beyond that, I propose that training interventions are a worthwhile investment, if an organization wants to stimulate shared leadership among its employees. Although there is no direct evidence of the effectiveness of shared leadership trainings, research on general leadership development programs suggests that such interventions are capable of enhancing leadership effectiveness (e.g., Collins & Holton, 2004). With regard to generating acceptance among formal leaders, I urge organizations to pay close attention when it comes to communicating the introduction and development of shared leadership practices. On the one hand, formal leaders are likely to be afraid of a loss of power, if an organization proclaims to foster the sharing of the leadership function (Pearce & Conger, 2003). On the other hand, it is important that formal leaders have a clear understanding of the concept and consequences of shared leadership. This will help them to adjust their own leadership behaviors in a way, which complements the coordinative activities of employees. In the communication process, I suggest that organizational decision-makers deal with potential ‘fears’ of formal leaders (e.g., loss of power, fear of redundancy, etc.) and highlight the positive consequences of shared leadership. For example, organizations can highlight that shared leadership will free up time resources
of formal leaders. As Mortensen et al. (2007) argue, time shortage is a common problem of leaders in MTM structure: on the one hand, they have to contribute to projects expertise-wise. On the other hand, they are often required to coordinate the single team members. Thus, if some tasks of the ‘classical’ leadership role are transferred to the employees, formal leaders will have more time to engage in exciting project work, contribute to strategic topics, or acquire new and innovative projects.

5.3.7 Multiteaming is no panacea for entrenched organizational structure

Throughout this dissertation, I have repeatedly pointed out that the consequences of multiteaming are *neither purely good, nor purely bad* (cf. also O’Leary et al., 2011), but dependent on various contextual factors, such as IPO, MTM design (e.g., avoidance of MTM heterogeneity), and organizational leadership. Moreover, I described multiple levers that organizations can pull, in order to create effective MTM structures. Notwithstanding the above, I strongly want to emphasize that MTM represents *no panacea* for low levels of organizational connectivity, efficiency, innovation, and the like. Although the three studies showed that multiteaming has the potential to increase individual performance, satisfaction and well-being, as well as the overall performance of entire organizations, the success of MTM structure requires various preconditions to be fulfilled. If this is not the case, the consequences for individuals, teams, and organizations may be dramatic (i.e., contrary effects on individual prosperity and firm performance).

In this light, my final recommendation to organizational practice is to not be blinded by the bright side and the substantial chances of multiteaming, but to carefully evaluate the pros and cons of such structures as well as the ‘multiteaming readiness’ of one’s organization.
5.4 Overall limitations and directions for future research

According to Chatman and Flynn (2005, p. 434), every methodological approach in organizational behavior research “offers distinct advantages and trade-offs”. For this dissertation, I decided to build on the ideas of internal realism (ontology) and post-positivism (epistemology), resulting in collection of rich quantitative data, development of hypotheses, and causal inference (cf. chapter 1.6.1). As summarized above, my methodological proceedings allowed me to gain valuable and practically relevant insights into the individual- and organizational-level functioning of MTM structure. Nevertheless, I am aware of potential drawbacks that have to be considered when interpreting the results of this dissertation (Chatman & Flynn, 2005). In chapters 2.5.3, 3.5.3, and 4.5.3, I have already presented in-depth limitations of the single studies. Subsequently, I rather deal with overall limitations that are related to the chosen research paradigm and thus pertain to all three studies of my dissertation. Based on this and beyond, I then discuss possible solutions and directions for future research.

5.4.1 Limitations and possible solutions for future research

First, I am aware that the application of self-rated MTM measures is likely to cause problems of validity and reliability. In this sense, the employees’ definition of ‘what is a team’ may vary to some extent, resulting in biased responses. Similarly, employees may decide to over- or underreport their number of team memberships for political or career reasons. Finally, it may be critical to ask the employees to report their average number of team memberships during the past six months. Within a period of six months, the number of team assignments may vary significantly, posing challenges of ‘mental arithmetic’ for the study participants. That being said, I tried to partly solve these issues by providing detailed definitions of ‘what is a team’ in the questionnaires as well as ensuring absolute anonymity to the participants. Moreover, methodological research by Alwin (2007) demonstrates that the collection of self-reported data is not as critical as often declared, but yields
acceptable reliabilities. Building on this, Chiocchio et al. (2010) even propose that self-reported data on number of (project) team memberships may be more accurate than record data. As already described in chapter 1.6.3, record data on team assignments may not always be adequate, up-to-date, or comparable between different firms (Chiocchio et al., 2010) – in fact, I made the very same experience throughout the data collection for this dissertation. Last but not least, also the magnitude of prior multiteaming research builds on self-reported MTM measures (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; Mortensen, 2014). Meanwhile, to the best of my knowledge, solely van de Brake et al. (2017) used record data to measure the number of MTM in their study. In all, I conclude that both, self-reported and record data on multiteaming encompass advantages and disadvantages. Hence, I propose that future research should try to concurrently collect information on MTM via both sources. On the one hand, this will allow for comparisons of the reliability of both approaches. On the other hand, a comparison between employee indications and organizational records may represent an interesting topic in itself: are organizational records flexible enough to capture the complex nature of MTM environments? Do employees feel treated unfairly, when their efforts are not mirrored in their organizational records? Do employees act differently in formal (i.e., recorded) and informal (i.e., not recorded) team memberships?

Second, it has to be taken into account that all three studies of this dissertation were based on samples collected in Germany. As discussed in prior research (e.g., van de Vijver & Leung, 1997), the application of single-country samples limits the generalizability of a study’s findings. Notwithstanding this limitation, I presented descriptive comparisons of the samples used in this dissertation and samples of prior research. These showed that the levels of multiteaming in the three studies of this dissertation were highly comparable to those of prior work (e.g., Mortensen et al., 2007; Pluut et al., 2014). Nevertheless, I recommend that future research on multiteaming accounts for cross-country and cross-cultural differences by collecting multi-country samples.
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Third, I am aware of the limitations of questionnaire-based research designs. As explained by Podsakoff et al. (2003), the application of questionnaires is a potential source of common method bias via processes, such as common source or rater, item characteristics and context, or measurement context. The consequence of common method bias are so-called method effects. That is, the observed relationship between variables is inflated by a high observed correlation between methods, rather than indicating the correlation between measures only (e.g., Cote & Buckley, 1988; Williams & Brown, 1994). To reduce the risk of method effects, I followed recommendations by Podsakoff et al. (2003, p. 898) and used different “procedural remedies related to questionnaire design”. For example, in study 1, I applied a longitudinal design and collected information on the main study variables (i.e., fragmentation of time and perceived role conflict) at different points in time. Meanwhile, in studies 2 and 3, I used different rater groups for the main study variables (i.e., employee survey, TMT survey, and HR survey). Furthermore, I checked collinearity statistics (i.e., VIF and tolerance coefficients) in supplementary analyses. Those yielded good results, indicating no multicollinearity problems.

Beyond issues of common method bias, I acknowledge that questionnaires may also not be capable of measuring individual behavior and cognitive processes (e.g., team role transitions) as well as intra- and inter-team interactions (e.g., knowledge exchange and acts of leadership) in closer detail. As mentioned before, however, these limitations are related to the chosen research paradigm. Following the ideas of internal realism and post-positivism, the goal of my research was to establish theoretically sound hypotheses and identify statistically significant patterns in large datasets, which – at least to some extent – allow to draw generalizable conclusions (Saunders et al., 2016). Obviously, these methodological proceedings prevented me from conducting in-depth analyses at the micro-level. Concerning future research, I thus propose that MTM scholars adopt a pluralistic attitude (Knudsen, 2003) and use mixed-methods designs in order to scrutinize the multi-faceted and complex nature of multiteaming. Only if multiple methods, such as observations, interviews,
experiments, questionnaire and panel studies are combined, we will be able to
fully understand the challenges and consequences of MTM structure.

5.4.2 General directions for future research

Within the three studies, I identified and proposed several directions for future
research (cf. chapters 2.5.3, 3.5.3, and 4.5.3). Roughly following the IMOI
structure presented in chapter 1.3.2 (Ilgen et al., 2005), I now integrate the
suggestions made in the three studies, in order to provide a more general
overview of potential directions for the field of MTM research. Figure 19
summarizes my propositions accordingly.

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**Figure 19. General directions for future MTM research**

*Note.* MTM = multiple team membership. TMGT = too-much-of-a-good-thing. HRM =
human resource management.

Concerning *team inputs*, my dissertation revealed that the employees’ IPO and
the organizational levels of MTM heterogeneity represent important factors.
Moreover, I found that it is a worthwhile investment to examine interaction effects between different dimensions of multiteaming (i.e., MTM level and heterogeneity). Drawing on these findings, I suggest that future research tries to identify additional personal characteristics of successful multiteamers. In chapter 2.5.3, I proposed that the concepts of basic needs (McClelland, 1985) and stress mindset (Crum et al., 2013) may represent promising starting points. Beyond the personality and competencies of single employees, it may also be a worthwhile endeavor to jointly analyze the characteristics of all team members: which combination of employees is needed to take care of both, the integration and sharing of knowledge? Which team personality compositions are most efficient and which are most innovative in MTM settings (cf. Miron-Spektor et al., 2011)?

Next, I urge future research to not exclusively focus on the (average) number of MTM, but address all facets of the phenomenon. Thereby, scholars need not necessarily come up with new dimensions of multiteaming, but they are able to build on the propositions of extant research. For example, I invite scholars to examine further consequences of MTM heterogeneity. In study 2, I discovered that MTM heterogeneity jeopardizes the development of organizational social capital in entire firms. Can those effects be transferred to the team-level? Moreover, MTM heterogeneity may influence the perception of justice in teams and organizations: do employees feel treated unfairly, if their inputs (i.e., number of MTM) are not reflected in their outputs (i.e., rewards; Adams, 1965)? Beyond MTM heterogeneity, future research should take up propositions by O’Leary et al. (2011) concerning the consequences of MTM variety. Furthermore, an examination of the (average) stability of team memberships is likely to be a profitable investment. In study 2, I used the average stability of team memberships as control variable and found that it is positively related to firm performance (cf. Table 8). Similarly, practitioners of agile project-management argue that stable teams are more effective in multi-project settings than fluid teams (Agile Alliance, 2001). That being said, social network theories would rather suggest the opposite pattern due to a greater access to organizational
networks and information (Borgatti et al., 2009). I believe that both, theory and practice would strongly benefit from research on the advantages and drawbacks of fluid and stable teams.

Last but not least, I repeat my calls for research that accounts for the TMGT effect (Pierce & Aguinis, 2013) as well as potential interactions between the various dimensions of multiteaming. For example, an increasing number of MTM may yield different effects (and different turning points) depending on the variety of the teams, the stability of team memberships, and the percentage of time spent on the respective teams. This is just one of many examples, which I hope will be addressed by future work.

With regard to *boundary conditions*, I found that organizational leadership (i.e., shared and hierarchical leadership) plays a vital role in establishing a productive organizational climate (cf. study 3). Beyond direct leadership, I believe that also various mechanisms of *indirect leadership* (i.e., structure, strategy, and culture; e.g., Wunderer, 1975) represent important contextual factors of effective MTM systems. In this sense, I propose that future research investigates the impact of structure (e.g., centralization and formalization of rules and procedures; cf. Walter & Bruch, 2010), culture (e.g., polychronic orientation of a firm’s culture; Bluedorn et al., 1999), and strategy in MTOs (e.g., HRM configurations; Lepak & Snell, 1999). Furthermore, an in-depth analysis of multiteam allocation decisions is likely to yield valuable results. In organizational practice, firms often use so-called ‘resource managers’, who are in charge of resource allocation decisions. I suggest that future research uses interviews and observations, in order to address questions related to the proceedings and decision-logic of resource managers: on which criteria do they base their decisions? Which degree of employee involvement yields the most effective decisions? How do resource managers deal with and adjust their prioritizations due to unexpected events?

Concerning *mediators* (i.e., *processes and states*), the three studies respectively addressed individual processes of role conflict as well as organizational states,
such as organizational social capital and POE. In this sense, I believe that my dissertation considerably advanced extant research, which so far has primarily focused on information exchange and attention (e.g., Bertolotti et al., 2015; Maynard et al., 2012; O’Leary et al., 2011). Due to prior theorizing (e.g., O’Leary et al., 2011) and the advancements of my dissertation, future work on multiteaming is now able to draw on a broad range of theories and mediating processes and states. In the next step, I suggest that MTM scholars build on these foundations and try to gain more fine-grained insights, rather than proposing additional mediators. As mentioned before, my work as well as most prior research on MTM (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; Pluut et al., 2014) were based on questionnaires and large quantitative data. In order to dig deeper into the underlying processes of multiteaming, I urge future research to draw on a greater variety of research paradigms and methodologies. On the one hand, the dominance of network- and attention-based theories in prior MTM research calls for the application of network analysis. For example, measures of network centrality (e.g., Bonacich, 1987) and structural holes (Burt, 1992) may help to analyze the importance of single employees and teams in MTM systems. Furthermore, network density measures (e.g., Kadushin, 2012) may allow for comparisons of the intra-organizational connectivity of different departments or firms. On the other hand, we still lack a clear understanding with regard to the differentiation between team-level and firm-level effects of organizational multiteaming. Although I elaborated on the firm-level consequences of MTM (cf. studies 2 and 3) and provided an initial demarcation of intra- and inter-team (exchange) processes (cf. chapter 5.2.2), I acknowledge that additional work is needed here. Therefore, I suggest that future studies build on seminal work by Klein and colleagues (e.g., Klein & Kozlowski, 2000; Klein, Tosi, & Cannella, 1999) as well as Hollenbeck and colleagues (e.g., Hollenbeck et al., 1995; Hollenbeck, Ilgen, LePine, Colquitt, & Hedlund, 1998), in order to develop and empirically test multilevel frameworks of multiteaming. Beyond theoretical and methodological extensions, I believe that work on boundary management (e.g.,
Aldrich & Herker, 1977; Ancona & Caldwell, 1992; Rosenkopf & Nerkar, 2001; Tushman & Scanlan, 1981) holds intriguing implications for research on MTM. For example, activities of boundary spanning, bridging and buffering (cf. Yan & Louis, 1999) represent processes that are potentially relevant for the conceptualization of knowledge exchange and integration in MTM systems. Therefore, I propose that future work integrates both fields of research, in order to enhance our understanding of inter-team processes in MTM settings.

In terms of multiteaming outcomes, I recommend that scholars pay closer attention to and sharply distinguish between the different types of performance in organizations. For instance, extant research has addressed the team-level consequences of MTM, without explicitly differentiating between selected outcomes of team performance and effectiveness (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012). Similarly, O’Leary et al. (2011) argue that MTM drives innovation and efficiency. In their theoretical propositions, however, they refer to productivity and learning. Finally, I acknowledge that studies 2 and 3 of this dissertation were also rather undifferentiated concerning the conceptualization of firm performance. To overcome this fuzziness, I suggest that future research on MTM builds on the distinction between innovation and efficiency proposed by O’Leary et al. (2011). On the one hand, the authors argued that multiteaming drives innovation via increased access to organizational networks and higher levels of intra-organizational connectivity. On the other hand, MTM was also proposed to enhance efficiency due to greater utilization and flexible resource deployment. As demonstrated by research on organizational ambidexterity (e.g., Andriopoulos & Lewis, 2009; Gibson & Birkinshaw, 2004; Raisch, Birkinshaw, Probst, & Tushman, 2009), however, innovation (i.e., exploration) and efficiency (i.e., exploitation) often represent mutually exclusive phenomena in organizations. That is, a team or an organization is either efficient or innovative. With that in mind, I believe that future research on the innovation and efficiency consequences of multiteaming represents a worthwhile investment. In the field of ambidexterity, the paradox of exploitation and exploration (cf. Andriopoulos
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& Lewis, 2009) has caused a plethora of research, which future work on multiteaming can build on. Based on this, I propose that scholars identify conditions and levers that help to foster innovation and/or efficiency in MTOs. Moreover, I urge future MTM research to adjust its outcome variables according to the theories and processes studied. When discussing network-related consequences of MTM structure, for example, it may be more appropriate to refer to innovation outcomes. Meanwhile, analyses of organizational resource utilization should rather involve performance measures of efficiency. Beyond content-related specification of outcomes, I repeat my calls for multilevel research on MTM – also with regard to outcomes. Most of all, I believe that research and practice would benefit from work on the joint consequences of MTM for individuals, teams, and the organization seen as a whole.

In addition to inputs, boundary conditions, mediators, and outcomes, IMOI models also point to the importance of considering feedback effects and effects over time (Ilgen et al., 2005). In line with this, I conclude my recommendations for future research by calling for time series studies on MTM. To what extent do the employees’ numbers of MTM change over time? How fluid is team composition in MTM contexts? Are there feedback effects between MTM and performance? Addressing these and many more open questions, I believe that time series analyses represent a crucial next step in capturing the dynamic and fluid nature of organizational multiteaming.

5.5 Conclusion and outlook

In the beginning of this dissertation, I asked: to multiteam or not to multiteam? Already this revealed that my attitude towards the application and effectiveness of MTM structure is not outright positive. Instead of being blinded by its substantial chances, I believe that both, organizational research and practice are well-advised to first develop a comprehensive understanding of the benefits, drawbacks, and boundaries of multiteaming. Only then, I recommend to structure work in organizations as multiple teams.
The majority of extant research has focused on the team-level consequences of MTM, yielding mostly beneficial consequences for single team performance and effectiveness (e.g., Bertolotti et al., 2015; Cummings & Haas, 2012; Maynard et al., 2012; O’Leary et al., 2011). In contrast to this, I adopted a more systemic approach (cf. Wageman et al., 2012) and holistically analyzed the consequences of MTM for single employees and the organization seen as a whole. Drawing on a variety of theoretical perspectives and multiteaming dimensions, my work underlines that an exclusive focus on team-level consequences is one-sided and even dangerous. In three independent, yet interrelated studies, I found that multiteaming has significant implications for individual perceptions of role conflict, as well as for intra-organizational connectivity and the development of a productive organizational climate. These effects, in turn, were related to individually and organizationally relevant outcomes, such as individual and firm performance, as well as employee satisfaction and well-being. Moreover, I was able to identify boundary conditions of effective MTM structures, such as high levels of employee polychronic orientation, low levels of MTM heterogeneity, and a synergistic combination of collective-focused leadership climate (Kunze et al., 2016) and integrated shared leadership (Pearce et al., 2014). Interestingly, all three studies followed the same pattern: if the boundary conditions were present, MTM yielded beneficial consequences. If not, the opposite was the case.

So, once again, to multiteam or not to multiteam? My answer to this question is a cautious, but determined yes, but…

‘Yes’, because contemporary organizations are required to be both, efficient and innovative, as well as be able to adapt dynamically to environmental changes. Without doubt, MTM structure has the potential to support organizations in reaching these goals.

‘But’, because organizations have to be aware of boundary conditions of MTM structure and deal with detrimental side effects. In particular, my dissertation revealed that those are not exclusively related to the management of single
teams, but also concern individual employees and the organization seen as a whole.

I hope that future research builds on my ideas, findings, and propositions, in order to advance our understanding of the dynamics and success factors of organizational multiteaming.
6 References


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