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## SOCIAL CAPITAL AND DYNAMIC CAPABILITIES IN A TOP MANAGEMENT TEAM

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SOCIAL CAPITAL AND DYNAMIC CAPABILITIES  
IN A TOP MANAGEMENT TEAM

by

D. Blaine Schreiner

A Dissertation

Presented in Partial Fulfillment of Requirements for the Degree of  
Doctor of Business Administration

In the  
Coles College of Business  
Kennesaw State University

Kennesaw, GA  
2018

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## ABSTRACT

### SOCIAL CAPITAL AND DYNAMIC CAPABILITIES IN A TOP MANAGEMENT TEAM

By  
D. Blaine Schreiner

Top management teams greatly influence the performance of their organizations based on their interpretations of the situations they face and the decisions they make built on those interpretations. In addition, the long-term success of the organization relies upon the top management team's ability to properly balance the exploration and exploitation capabilities of the organization. The literature regarding the impact of the top management team's social capital is limited and even less is known about the intra-organizational social capital of this group. This study examines the effect of the top management team's intra-organizational social capital on exploratory and exploitative dynamic capability creation as well as the potential mediating role of the relational dimension of social capital. In so doing, this study follows prior research which found that different dimensions of social capital were needed for the successful completion of different types of tasks and applied the same thinking toward the top management team's social capital and dynamic capabilities.

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## CHAPTER ONE: INTRODUCTION

Social capital is the goodwill that is available between individuals and groups which provides information and influence (Adler & Kwon, 2002; Burt, 1992; Coleman, 1988; Granovetter, 1973). Dynamic capabilities are processes that reside within the firm where capabilities are assembled or reconfigured in response to a changing environment (Teece, 2014; Teece, Pisano, & Shuen, 1997). Dynamic capabilities are considered a critical determinate of organizational performance and survival (Eisenhardt, Furr, & Bingham, 2010; Teece, 2007). Research has shown that social capital can assist in the creation of dynamic capabilities (Blyler & Coff, 2003; Helfat & Martin, 2015).

Another critical component of an organization's survival is its ability to balance the exploitation of existing technologies and the exploration of new technologies (March, 1991). Within dynamic capabilities, the idea that organizations must balance capabilities between those that explore and those that exploit has also emerged (Jansen, Van den Bosch, & Volberda, 2006). Research has identified that top managers are primarily responsible for determining how the organization balances this ambidexterity (Eisenhardt & Martin, 2000; Raisch, Birkinshaw, Probst, & Tushman, 2009; Teece, 2007; Teece et al., 1997). While we know that social capital helps create dynamic capabilities (Blyler & Coff, 2003), there are conflicting research streams about how the dimensions of social capital interact in the creation of dynamic capabilities (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).

Nahapiet and Ghoshal (1998) identify three dimensions of social capital that organizations use to create an organizational advantage. Under this model, the three dimensions of social capital are parallel with each providing individual benefits while also interacting with the other dimensions to provide benefits. The structural dimension of social capital is the configuration and type of contacts in the relationship. The relational dimension is the level of assets such as trust in the relationship. And the cognitive dimension is the common understandings or shared goals within the relationship. Nahapiet and Ghoshal (1998) propose that the dimensions of social capital within an organization help create intellectual capital leading to organizational advantage.

Tsai and Ghoshal (1998) present a different model where the structural and cognitive dimensions are antecedents to the relational dimension. They studied a single large multinational organization and found strong support for social capital leading to resource exchange or combination and value creation. In their study, there was a strong relationship between the relational dimension and both the structural and cognitive dimensions. However, there was not a significant relationship between the structural and cognitive dimensions. In the time since these studies were published, there have been a limited number of studies looking at these two different models in various environments with support being shown for both models (Hsu & Hung, 2013).

The ability of the top management team (TMT) to have ambidexterity, or a balance between exploration and exploitation activities, is critical to an organization's performance (Lubatkin, Simsek, Ling, & Veiga, 2006; O'Reilly & Tushman, 2008). The TMT is also responsible for recognizing changes in their environment and redeploying capabilities to take advantage of the opportunities created by the changing environment

(Eggers & Kaplan, 2013). Thus, the TMT is a critical part of the organization's ability to create and balance the dynamic capabilities of the organization. Despite the importance of this group and the knowledge that social capital assists in the creation of dynamic capabilities, intra-organizational social capital has rarely been studied (Phelps, Heidl, & Wadhwa, 2012). In looking at the managerial impact on strategic change and firm performance Helfat and Martin (2015) also note that there are few studies on managerial social capital and those studies that have been done have measured social capital in a variety of ways.

Thus, we know that TMT's are important to the creation of dynamic capabilities which are crucial to the survival of the organization. In addition, the TMT is responsible for balancing the dynamic capabilities between exploitation and exploration. Lastly, we know that the social capital of the TMT will help in the creation of dynamic capabilities. What we do not know is how the dimensions of the TMT's social capital interact and how their dimensions of social capital impact the creation of exploitative and exploratory dynamic capabilities. Just like Moran (2005) found that structural social capital created better performance of execution oriented tasks and relational social capital was better for innovation oriented tasks, this study hopes to find that the different dimensions of social capital will create different types of dynamic capabilities.

This study addresses the gaps in the literature that have been identified surrounding the interactions between the dimensions of social capital in the TMT and the creation of exploitative and exploratory dynamic capabilities. The study examined the interconnectedness between the dimensions of social capital to identify if there is a notable association at the TMT level. In addition, the study looked at the relationship of

the dimensions of social capital to exploratory and exploitative dynamic capabilities to see if the different activities required by the capabilities originate from different dimensions of social capital. Lastly, the study examined the role that trust plays in relational social capital to see if it amplifies the ability to create dynamic capabilities.

The underlying research question for this study was, “What role does the TMT have in the creation of dynamic capabilities?” This question is a natural progression from one of the fundamental questions of strategic management, namely how do organizations achieve and sustain competitive advantage (Rumelt, Schendel, & Teece, 1994). As shown above, dynamic capabilities are considered a critical determinant of organizational performance and TMTs are primarily responsible for the identification and creation of dynamic capabilities. Thus, TMTs have an impact on organizational performance, which is also a foundational tenet of Upper Echelons Theory (Hambrick & Mason, 1984). And in looking at the intrafirm social capital of the TMT, this study addresses a gap in the dynamic managerial capabilities literature (Helfat & Martin, 2015; Helfat & Peteraf, 2015).

The study provides an academic contribution by bringing further clarity to the question of how organizations achieve competitive advantage. Existing research has looked at the social capital – dynamic capability relationship as a simplistic high-level relationship. This study shows that the relationship between the two constructs is more nuanced than what is currently believed. Specifically, it shows that different dimensions of social capital are important in the creation of exploitative and exploratory dynamic capabilities and that the relational dimension of social capital is important to create either type of dynamic capability.

This study contributes to the literature on TMT social capital. The few studies that have looked at TMT social capital tend to focus on the CEO instead of the TMT and also on their contacts outside of the organization (M. Acquah, 2007; Cao, Simsek, & Zhang, 2010; Helfat & Martin, 2015; Moran, 2005; Smith, Collins, & Clark, 2005). By focusing on the TMT and their internal and external social capital, this study provides a new view of how the social capital of the TMT impacts the organization.

The last academic contribution this study makes is to explore the possibility of mediation in the interactions between the dimensions of social capital. An unresolved conflict in social capital is that some researchers believe the dimensions of social capital are parallel in their interaction while others believe there is a causal relationship. Following the Tsai and Ghoshal (1998) model where relational social capital is created by structural and cognitive social capital, some researchers have found that as the number of interactions increases or there are increases in shared visions and values there is a building of trust (Chua, Morris, & Mor, 2012; Gillespie & Mann, 2004), and other researchers have found trust to be the most important dimension for the transfer of knowledge (Moran, 2005; van Wijk, Jansen, & Lyles, 2008).

This study also provides a practical contribution by showing how the interaction of the TMT impacts organizational performance. Knowing how specific actions and behaviors impact the development of capabilities will give TMT's the knowledge of what to actions to take in their given situation. It could also potentially identify problem areas in the TMT for organizations whose performance is less than desired. This study might also impact the hiring of individuals for the TMT by identifying the impact they will have on performance due to how their social capital fits within the existing TMT.

## CHAPTER TWO: LITERATURE REVIEW

To investigate how managers interact with one another to create dynamic capabilities, this research examines the development of social capital within a top management team. The review of the supporting literature is organized as follows: first, is a review of the social capital literature starting with its various dimensions and ultimately focusing on the TMT. The second section reviews the dynamic capabilities perspective and its foundation in the resource-based view of strategic management with a focus on the manager's role in creating dynamic capabilities. The third section examines the relationship between social capital and dynamic capabilities with a concentration on the relationship between dimensions of social capital and the differing capabilities needed for exploration and exploitation. In the last section, the specific hypotheses for this study are developed.

### Social Capital

Social capital is defined as, “the goodwill available to individuals or groups; its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor” (Adler & Kwon, 2002, p. 23). As evidenced by the definition, social capital can reside at the individual, group, or organizational level (Payne, Moore, Griffis, & Autry, 2011) and it can be both a private and a public good as social capital created by the individual (private good) can be transferred to the organization, becoming a public good (Kostova & Roth, 2003).

Similar to other types of capital, social capital is an asset that can be held for future use, can be used for different purposes, can be used separately or as a substitute or complement for other resources, and must be maintained to prevent a loss of value.

There are many benefits to having social capital, but there are also risks involved in the creation of social capital. Also, not all social capital has the same value as different tasks require a different type of relation between actors for a benefit to be realized (Adler & Kwon, 2002; Kwon & Adler, 2014). One of the risks of social capital is that it takes an investment by the actor and the cost of the investment may exceed the benefit gained in return. Other risks to social capital are the actor may become over embedded in their network causing a significant reduction or total elimination of new information and the tradeoff between power and information is such that less diverse information is communicated as an actor gains power (Adler & Kwon, 2002).

Nahapiet and Ghoshal (1998) use the idea of social capital residing in an organization to propose that organizations use social capital for the creation and exchange of knowledge and this knowledge can lead to an “organizational advantage.” In their model, social capital is divided and evaluated along three main dimensions, relational, structural, and cognitive (Nahapiet & Ghoshal, 1998). Relational social capital refers to the connection or relationship between two actors and manifests itself in research as trust and tie strength. The structural dimension of social capital represents the patterns and configurations of relationships and linkages between actors. The third dimension of social capital, the cognitive dimension, denotes the shared meaning and interpretation within a relationship between two actors. Within their model, the dimensions of social



capital are parallel and equally impact the creation and exchange of knowledge in pursuit of an “organizational advantage.”

The three dimensions of social capital were identified based on earlier studies showing the different facets of social capital and their impact on knowledge exchange (Nahapiet & Ghoshal, 1998). The early studies of social capital focused on the different types of knowledge being exchanged, such as tacit versus explicit knowledge, and the type of relationship between the actors leading to debates such as were strong ties better than weak ties. Because individuals have more than one relationship, the idea of social capital between actors expanded to look at the placement of the actor within their network and the various relationships they had within their network (Burt, 2000). Since this study is looking at the social relationship of the TMT within an organization, the research question is about the capital residing in the social relationships between the TMT members and not about the placement of the TMT members in their social network.

The main benefits gained by having social capital are an access to more and different sources of information, the ability to exert influence or power over others, and the ability to maintain solidarity or social norms (Burt, 1992, 1997; Coleman, 1988; Granovetter, 1973). Each dimension of social capital provides a different type of benefit to the actor and also creates a potential risk that must be recognized. The structural dimension of social capital focused on the access accorded to the actor based on numbers of ties or tie configuration. The greater the number of ties or interactions with ties, the greater opportunity for information flows and the better the chances that the information is provided sooner (Burt, 1992). However, there are limitations to this dimension in that it is possible to have a large number of ties that are not diverse and therefore only provide

duplicative or redundant information. The cognitive dimension of social capital recognizes that meaningful communication can only occur if there is a shared language or a shared narrative between actors. These items create a shared perception or interpretation of information increasing the likelihood of a transfer of knowledge (Nahapiet & Ghoshal, 1998). The limitations with this dimension are twofold: first, if the cognitive dimensions of both actors are too similar there is a lack of diverse information, and second, if the cognitive dimensions are too different there is an inability to transfer information. The relational dimension of social capital provides not only the access to information, like the structural dimension, or the anticipation of value from the information similar to the cognitive dimension, but also a motivation to engage in information sharing. For the relational dimension of social capital to increase, an increase in the levels of trust, shared norms, obligations, expectations, and identification with the group are helpful since these increase the motivation of the actor(s) to engage in information sharing (Nahapiet & Ghoshal, 1998). Because each of the three dimensions provides different motivations for information exchange, access, anticipated value, and inclinations to engage, it is important to consider all three dimensions when studying information sharing and knowledge transfer.

Access to greater and more diverse information comes when the focal actor's contacts do not know each other and especially if those contacts have relationships with others outside the focal actor's network. This bridging of ties provides faster access to knowledge and new understandings (Blyler & Coff, 2003; Reagans & McEvily, 2003). Alternatively, groups where everyone knows each other are considered closed networks and they have been shown to create stronger ties between contacts, thereby increasing the

amount of influence on each other. These strong ties also create trust between the actors which improves the efficiency of working together and also promotes the transfer of knowledge between each other (Zaheer & Bell, 2005). While strong ties and weak ties provide different benefits, most scholars view them as complementary and individuals and organizations need both types of ties to be successful (Payne et al., 2011).

As mentioned earlier, different tasks require different types of relations in order to realize a benefit. For example, the dimensions of social capital are different in how they assist in knowledge transfer and task completion. The structural dimension of social capital can create “structural holes” which have been shown to facilitate bringing in new knowledge. Weak ties and structural holes also provide better access to public and explicit knowledge that is less likely to be redundant information (Levin & Cross, 2004; Reagans & McEvily, 2003; Uzzi & Lancaster, 2003). Strong ties create a closed network that enforces social norms and increases the efficiency of completing routine tasks and provides access to private tacit knowledge (Burt, 1992; Coleman, 1988; Moran, 2005; Reagans & McEvily, 2003; Uzzi & Lancaster, 2003; Zaheer & Bell, 2005). The shared visions of cognitive social capital have also been shown to improve knowledge transfer by creating closure (van Wijk et al., 2008). The trust of relational social capital improves the knowledge transfer both for innovation and execution tasks making it arguably the most important driver of knowledge transfer (Moran, 2005; van Wijk et al., 2008).

In looking specifically at value creation in an intrafirm network, Tsai and Ghoshal (1998) argue that the three dimensions of social capital are not parallel. In their model of social capital and value creation, structural and cognitive social capital are antecedents to relational social capital. This view is based on earlier studies showing that trust increases

as social interactions increase and common values along with shared visions build trust in relationships (Granovetter, 1985). Social capital within a single organization has some unique facets to the three dimensions and how they interact (Inkpen & Tsang, 2005). The structural dimension of an organization is typically a defined hierarchy where there is some connection between all members of the organization such that connections are easier to establish. However, higher turnover within the organization will impact the stability of connections. Still, since all employees have a connection, structural social capital facilitates the number of interactions between actors as the increasing interactions allow the actors to identify the capabilities of each other. Similarly, for the cognitive dimension, there may be common goals shared by all in the organization, but there are also secondary goals within units or departments that may cause conflict. The relational dimension also is unique within an intrafirm network where there is a minimal level of trust for all since everyone is a member of the organization. However, there are career risks if the other actor turns out to be untrustworthy. Due to the significant influence of these career risks, it could be that the structural and cognitive dimensions of social capital increase for the manager before the relational dimension increases.

Three sources of social capital have been identified, opportunity, motivation, and ability (Adler & Kwon, 2002). Opportunity is provided to the actor by the structure of their relations, the norms and values that are part of community membership are a key source of motivation, and ability is the goodwill that can be activated for use from each of the connections in the actor's network. It is the structure of an actor's network that provides them the opportunity to amass social capital, as it is in their various groupings of strong or weak ties where the opportunity resides for the creation of social capital.

Recently scholars have recognized that individual cognition plays a central role in determining opportunity as different actors will perceive their social ties differently and thus “see” different opportunities or constraints within their network (Kilduff & Brass, 2010; Tasselli, Kilduff, & Menges, 2015). Kwon and Adler (2014) argue that motivation is a key source of social capital because resources that are potentially available are only activated when the actors are motivated to share those resources. Nahapiet and Ghoshal (1998) would add that there also needs to be an anticipation of value in the information being received. Thus, while there may be a structural connection that would normally create social capital, if either of the individuals does not have the motivation to share information or believe the information will be of no value to them, no social capital will be created. Alternatively, individuals may have a specific goal in mind that brings them together and provides the motivation to activate the resources that create social capital. Ability can also impact the creation of social capital in two ways; first, actors possessing resources that are complementary to another actor’s skills will create social capital with a higher value than those actors whose resources are similar to the other actor’s. Second, social skill of the actor is needed to successfully activate the potential social capital. Therefore, managerial action along with managerial ability or the lack thereof determines if social capital is created.

Thus, social capital generates a benefit in the information and influence it creates for the actor. However, different dimensions of social capital are needed to provide benefits for different types of tasks. Also, there continues to be a conflict regarding the dimensions of social capital and how they are interrelated (Hsu & Hung, 2013). Social capital is also a multi-level phenomenon that can occur within or between groups (Payne

et al., 2011). This study focuses on social capital that occurs within a TMT and determining how the dimensions of social capital are related at this intra-organizational level which has not been extensively studied (Phelps et al., 2012).

### Dynamic Capabilities

Dynamic capabilities are an increasingly popular research area that originated in the field of strategy (Schilke, Hu, & Helfat, 2018). One reason for the popularity of dynamic capabilities research is that dynamic capabilities can provide an ability for an organization to create a competitive advantage (Helfat & Peteraf, 2009). However one of the challenges arising from this popularity is that there are several definitions being used for dynamic capabilities. Teece et al. (1997) provided the first and most popular definition calling dynamic capabilities “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (p. 516). The second most popular definition for dynamic capabilities comes from Eisenhardt and Martin (2000) who define dynamic capabilities as “the firm’s processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create market change” (p.1107). A newer definition provided by Helfat et al. (2009) that is gaining in popularity attempts to combine the earlier two definitions by defining dynamic capabilities as “the capacity of an organization to purposefully create, extend, or modify its resource base” (p.1). This study follows the current trend and uses Helfat’s definition of dynamic capabilities.

Another split in the dynamic capabilities literature is over whether the focus of dynamic capabilities is on the role of the manager or that of the organization (Di Stefano, Peteraf, & Verona, 2014). This study follows Zahra, Sapienza, and Davidsson (2006)

and their perspective that an organization's resource base is modified "in the manner envisioned and deemed appropriate by its principal decision-maker(s)" (p. 918). Teece (2007) originally conceived that managers needed to respond to the changing environment by sensing, seizing, and reconfiguring. To maintain pace with the changing environment, managers and firms must be able to scan and assess their environment for potential opportunities and threats. Specifically, an individual manager or the top management team must have the ability to identify and capitalize on emerging threats and opportunities, recognize and assimilate new information, and use this to develop new products and services.

#### Dynamic Managerial Capabilities and Managers

With managers playing such a critical role in the creation of dynamic capabilities, scholars have introduced the concept of dynamic managerial capabilities (Adner & Helfat, 2003; Helfat & Martin, 2015; Kor & Mesko, 2013; Martin, 2011). Dynamic managerial capabilities have three core foundations: managerial cognition, managerial social capital, and managerial human capital (Helfat & Martin, 2015). These three foundations have separate effects, but they also interact with one another (Adner & Helfat, 2003). Managerial cognition is the mental models and beliefs, or knowledge structures held by the manager which also includes their mental processes and emotions (Eggers & Kaplan, 2013; Helfat & Martin, 2015; Helfat & Peteraf, 2015). Managerial social capital is the goodwill derived from relationships, both formal and informal, that managers have with others and which can be used to obtain resources and information (Adler & Kwon, 2002). Since Helfat and Martin identified manager cognition separately, they defined managerial human capital using a definition from Wright, Coff, and

Moliterno (2014, p. 361) “that human capital comprises . . . knowledge, education, experience, and skills” of the manager. Using this definition means that human capital does not have to be firm specific to create value for the firm (Helfat & Martin, 2015).

Managerial social capital has been the least studied of the three dynamic managerial capabilities (Helfat & Martin, 2015). Most of the studies that have examined social capital have focused on relationships outside the firm and have examined its relationships to a specific aspect of performance like sales (Moses Acquah, 2012; Davidsson & Honig, 2003; Prashantham & Dhanaraj, 2010; Smith et al., 2005) or innovation (Moran, 2005; Smith et al., 2005). Geletkanycz and Boyd (2011) used financial performance of the firm as the dependent variable, but they were examining specific external relationships of CEOs with outside directorships. Thus there is a gap in the literature regarding the impact of the intrafirm social capital of the TMT that will be the focus of this study.

#### Role of the Environment and Manager

To reiterate, dynamic capabilities address the challenge of sustaining competitive advantage in the context of environmental change (Helfat & Peteraf, 2009). Hence, the use of “dynamic” is used to describe the type of capability needed for a firm that is in a turbulent and highly competitive industry. Some researchers even posit that environmental dynamism is what triggers the development of dynamic capabilities in firms (Wang & Ahmed, 2007). While the initial view was that dynamic capabilities were needed in highly dynamic environments, the field is now divided between those that follow the original view and others who believe that dynamic capabilities are relevant in both stable as well as dynamic environments (Barreto, 2010). Those scholars who have



migrated from the original viewpoint argue that most industries are now at least moderately dynamic which now makes dynamic capabilities relevant across a broader spectrum of settings (Eisenhardt & Martin, 2000; Helfat & Peteraf, 2009; Zollo & Winter, 2002).

Since it is the TMT that identifies and responds to changes in the environment, differences in how they see the environment are critical for the development of dynamic capabilities. Moreover, because managers are different, they will have different perceptions of the environment and how the firm should respond. This difference is the foundation for the idea that heterogeneity in managers' cognitions leads to heterogeneity in firms' dynamic capabilities. Thus, the mental models or cognition of the manager is a key differentiator as those managers with the cognitive ability to develop more accurate mental models will make better decisions and improve firms' dynamic capabilities (Gary & Wood, 2011).

#### Exploitative and Exploratory Dynamic Capabilities

The foundation for the concepts of exploitation and exploration begins with the seminal work of March (1991) as he identified the balance between short-term and long-term learnings needed for organizational survival. To survive in the short-term an organization must focus on efficiency and execution to enhance productivity (exploitation). However, to survive in the long-term an organization must search for new markets and experiment with new products (exploration). Organizations, with their limited resources, must choose between these two options when making decisions about capital investments and competitive strategies. However, while there are motivations for organizations to emphasize one approach over the other, they must balance exploration

and exploitation activities to ensure current and future viability (Levinthal & March, 1993).

There is inherent tension within the organization that attempts to balance their exploration and exploitation activities. Returns from exploitation are typically more certain and occur sooner while returns from exploration are more uncertain and require more time to generate benefits. This disparity, called a “competency trap,” causes many firms to focus on exploitation, which helps them be dominant in the short-run but vulnerable to environmental changes in the long-run (Benner & Tushman, 2003; Levinthal & March, 1993). There is also a “failure trap” where inexperience in exploration leads to failure and a constant search for alternatives that squeeze out resources dedicated to exploitation (Gupta, Smith, & Shalley, 2006; Siggelkow & Levinthal, 2003; Simsek, Heavey, Veiga, & Souder, 2009). Organizations that are successful in the long-run can possess the capabilities to compete in existing markets and the capabilities to reconfigure assets to respond to emerging markets. Those capabilities used to compete in existing markets are defined as exploitative capabilities and those used to respond to emerging markets are defined as explorative capabilities (O'Reilly & Tushman, 2008). Because the skills required of the TMT for exploration are fundamentally different from the skills needed for exploitation, the ability to perform both capabilities is called ambidexterity (Lubatkin et al., 2006; O'Reilly & Tushman, 2011; Raisch et al., 2009). However, organizations need to have both exploitative and exploratory dynamic capabilities to have short-term performance and long-term survival.

The ambidexterity literature has not developed a consensus on the concepts of exploration and exploitation. Gupta et al. (2006) identify four “central questions” where

there is inconsistency or ambivalence in the literature. To clarify the viewpoint of this study, these four questions are addressed here with how they were treated for this study. The first question is the definition of exploration and exploitation and the difference in learning between the two. This study followed the position of Gupta et al. (2006) and March (1991) that especially at the group or organizational level, both activities involve some learning and that exploration is experimentation with new alternatives and exploitation is the refinement of existing technologies. The second question is whether exploration and exploitation are orthogonal or exist on a continuum. This study viewed the two constructs as orthogonal as at the group or organizational level, the resources needed for these activities could be delegated to different parts of the group or organization. The third question is whether the balance needed for survival is achieved by ambidexterity or by punctuated equilibrium. This study concurred with Gupta et al. (2006) that at the group or organizational level where there is access to multiple domains, and the constructs are viewed as orthogonal, ambidexterity is desirable over punctuated equilibrium. The last question is whether the organization must have duality or whether it could specialize in one area (exploration or exploitation) with the balance occurring within the broader social system (with one organization specializing in exploration while another specializes in exploitation, thereby creating a balance). While Gupta et al. (2006) present conditions where specialization could work, they were not feasible for this study so this study used the view that the organization must have ambidexterity within its borders.

## Foundation in the RBV

Dynamic capabilities had its beginnings in evolutionary economics, the resource-based view of the firm (RBV), and the behavioral theory of the firm (Helfat & Peteraf, 2009). The RBV posits that resources that are valuable, rare, imperfectly imitable, and imperfectly substitutable (VRIN) are a source of competitive advantage (Barney, 1991). Dynamic capabilities extend the RBV by showing that a firm not only exploits existing resources but also needs to refresh those resources or create new VRIN resources to maintain a competitive advantage under changing market conditions (Ambrosini & Bowman, 2009; Teece et al., 1997).

As stated above, a dynamic capability is the capacity of an organization's managers to purposefully create, extend, or modify its resource base. The predominant argument is that managers use their experience to create routines which become the building blocks for dynamic capabilities (Eggers & Kaplan, 2013; Wang & Ahmed, 2007). However, dynamic capabilities are not a competitive advantage in themselves (Wilden, Gudergan, Nielsen, & Lings, 2013). Instead, the resource configurations generated by dynamic capabilities can create competitive advantages. Thus, dynamic capabilities are a necessary, but not sufficient, condition for achieving competitive advantage (Eisenhardt & Martin, 2000).

To be a source of competitive advantage, dynamic capabilities must rely on processes that assemble or creates VRIN resources in response to the external environment. Often dynamic capabilities are developed over time through complex interactions between the firm's resources making them firm-specific capabilities and therefore more likely to be a VRIN resource (Amit & Schoemaker, 1993). However, any

advantage gained from this resource will last only as long as there is no change in the firm's environment. Once there is a change in the environment eliminating the VRIN properties of the resource, the competitive advantage is lost. Thus, a firm may have VRIN resources, but without dynamic capabilities, its advantages cannot be sustained; the firm's returns will only survive until there is a change in the environment (Ambrosini & Bowman, 2009; Barreto, 2010).

### Top Management Teams

Upper Echelons Theory argues that the actions of an organization are determined by the top managers in the organization and that the decisions made by the top managers are a function of the manager's prior experiences, values, and personalities (Carpenter, Geletkanycz, & Sanders, 2004; Geletkanycz & Hambrick, 1997; Hambrick, 2007; Hambrick & Mason, 1984). Because these actions impact firm performance and the actions are chosen by the top managers, the top management team impacts the performance of the organization. For example, Collins and Clark (2003) show that the external networks of the top management team impacted the organization's sales growth and stock returns. For this study, it is the top management team that uses their social capital to develop the knowledge of how to interpret and respond to the external environment and determines what dynamic capabilities to develop to create a performance advantage for their organization.

### Social Capital and Dynamic Capabilities

Social capital is a key component of dynamic managerial capabilities as firms would be unable to acquire, recombine, and release resources without the social capital of individuals (Blyler & Coff, 2003). However, the studies linking social capital and

dynamic capabilities typically use sales, innovation, or some version of strategic change as a proxy for dynamic capabilities. The one exception to this is Geletkanycz and Boyd (2011) who looked at CEO outside directorships as a social capital measure and found a positive relationship to financial performance measured as a five year average of return on assets and return on sales.

Most of the studies that link social capital to dynamic capabilities focus on the social capital of the CEO. The network size of the CEO is the most prevalent type of social capital that has been measured and it has been shown to increase innovation and various versions of strategic change (Alexiev, Jansen, Van den Bosch, & Volberda, 2010; Diez-Vial & Montoro-Sanchez, 2014; Fernandez-Perez, Garcia-Morales, & Bustinza, 2012; Gutierrez & Perez, 2010; Houghton, Smith, & Hood, 2009). The CEO has been shown to be the most important member of the TMT, but there is an argument that it is the TMT that assembles dynamic capabilities. Also, the TMT has input into the strategic decision-making process, and they must execute and coordinate the actions to create strategic change. If part or all of the TMT do not agree on the strategic direction of the organization, do not trust each other, or are unsure about each other's abilities then it will be more difficult for the TMT to create or assemble dynamic capabilities. Thus, the social capital of the TMT is instrumental in the assembly of a firm's dynamic capabilities.

Despite the focus on the CEO, research has demonstrated a connection between social capital and dynamic capabilities (Blyler & Coff, 2003). While this connection has been established, findings have shown that more social capital leads to more dynamic capabilities. This is a simplistic viewpoint and there is a possibility that the relationship

is more complex than has been shown, with the different dimensions of social capital being needed for different types of tasks. The basic view that any social capital leads to dynamic capabilities follows the view of Nahapiet and Ghoshal (1998) described below where the dimensions of social capital are parallel. However, Tsai and Ghoshal (1998) have shown that there is a causal relationship between the dimensions of social capital. This causal relationship could mean that different types of social capital may lead to different types of dynamic capabilities. Some researchers believe that an “approach suggesting an indirect link between dynamic capabilities and performance may hold the most promise” (Barreto, 2010, p. 275). If we look at some dynamic capabilities that were created from knowledge new to the firm as having exploration potential and dynamic capabilities arising from existing knowledge as having exploitation potential, then the organizational ambidexterity view may provide a link between dynamic capabilities and firm performance.

### Hypothesis Development

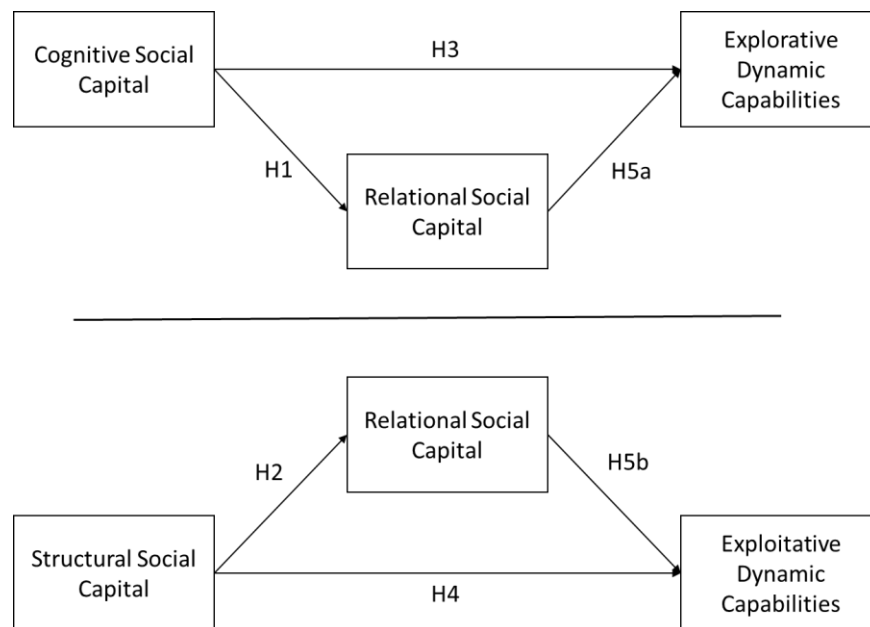
Nahapiet and Ghoshal (1998) originally conceived the three dimensions of social capital as parallel elements. However, Tsai and Ghoshal (1998) found that there were causal relationships between the dimensions. This has caused two distinct streams of research to emerge (Hsu & Hung, 2013). Studies following the original idea of parallel elements have found that each dimension has a positive relationship with knowledge sharing and knowledge contributions. There have been two studies in this stream that have looked at the effect of TMT social capital on new product development. Atuahene-Gima and Murray (2007) found a positive relationship between the dimensions of social capital and both exploratory and exploitative learning in new product development for

organizations based in China. Land, Engelen, and Brettel (2012) expand on Atuahene-Gima and Murray's findings by getting similar results for organizations in the United States, Germany, and Australia.

The few studies that have been within the second stream of research looking at causal relationships have also found positive relationships between the dimensions of social capital. Beyond the original study by Tsai and Ghoshal (1998) which was conducted within one organization, the studies looking at causal relationships have been entirely in technology environments and focused on the social capital of users (van den Hooff & de Winter, 2011; van den Hooff & Huysman, 2009; Wang & Chiang, 2009). These follow-up studies have obtained similar results to the original study by Tsai and Ghoshal (1998) in that the structural and cognitive dimensions have a positive relationship to the relational dimension, with the exception of Wang, Rodan, Fruin, and Xu (2014), who found a non-significant relationship between the structural and relational dimensions. This study proposed to add support to the second stream of research by showing that structural and cognitive social capital have a positive relationship to relational social capital.



Figure 1. Research Question and Research Model



### Linking Cognitive and Relational Dimensions

The cognitive dimension of social capital is identified by attributes such as having similar mental models or shared interpretations between actors. This is personified in the TMT by their having a shared vision, common values, and shared language among all members. Thus, an increase in the shared visions and values within the TMT increases the cognitive social capital of the TMT. As there is an increase in the shared visions and values within the TMT, there is also an increase in the level of trust between members (Gillespie & Mann, 2004). Put another way, those inside an organization that share collective goals or values are likely to be seen as trustworthy. Being seen as trustworthy increases the level of trust between actors (Fulmer & Gelfand, 2012). From this, we would anticipate that trust between actors will increase as the shared visions and values

between them increases, and since the relational dimension of social capital represents the quality of the relationship signified by the amount of trust, we hypothesize that:

*Hypothesis 1. Cognitive social capital of a TMT will be positively related to the relational social capital of the TMT*

#### Linking Structural and Relational Dimensions

The structural dimension of social capital is expressed as the connection between actors. This connection in the working environment posits that two actors will have numerous and repeated interactions over time. Continuous interactions over time have been shown to increase trust between two actors (Chua et al., 2012; Granovetter, 1985). Frequent work interactions help actors to learn about each other, to share important information, and to gauge each other's capability. As the belief in each other's capability to do their job increases, trust between actors increases (Colquitt, Scott, & LePine, 2007). Researchers have viewed that team trust is a similar construct to interpersonal trust with the key difference being the components of trust are shared among team members (Fulmer & Gelfand, 2012). Thus, trust in the TMT is additive in that the more members of a TMT an actor trusts, the more the actor trusts the TMT. From this, we would anticipate that trust between actors and with the TMT will increase as the work interactions between them increase, and since the relational dimension of social capital represents the quality of the relationship signified by the amount of trust, we can hypothesize that:

*Hypothesis 2. Structural social capital of a TMT will be positively related to the relational social capital of the TMT.*

#### Cognitive Social Capital and Explorative Dynamic Capabilities

As mentioned earlier, the cognitive dimension of social capital is related to the similar mental models, shared visions and common values of the TMT. At the TMT level, TMT's that have similar mental models and shared visions are likely to agree on the strategic actions the organization needs to achieve. TMT's that agree on the needed strategic actions for the organization will likely have more open discussions and greater interactions. More interactions between TMT members increase the number of opportunities to reconfigure resources and implement new knowledge. Although some might argue that cognitive social capital in the TMT would reduce the openness of the TMT to new ideas, research has found that to not always be the case (Atuahene-Gima & Murray, 2007). Also, for that argument to hold, the TMT would have to remain stable over a long period which, given the rate of turnover for top management positions, is less likely to happen.

Exploitative dynamic capabilities are capabilities that are used to compete in existing markets. They broaden existing knowledge and skills, improve designs, and increase efficiency (Jansen et al., 2006). Given that cognitive social capital is the similar mental models and shared visions of the TMT which allows the TMT to agree on the necessary strategic actions to take, one might think that cognitive social capital could lead to the creation of exploitative dynamic capabilities. However, agreeing on the current picture and strategic actions that need to be undertaken does not guarantee the ability to execute those actions. The knowledge of the organization's current capabilities and who possesses those capabilities comes from the repeated interactions of structural social capital (Eggers & Kaplan, 2013). Therefore, structural social capital is the dimension of social capital that is more likely to have a relationship with exploitative dynamic

capabilities. Hence, this study did not hypothesize a relationship between cognitive social capital and exploitative dynamic capabilities.

Exploratory dynamic capabilities are those capabilities used to meet the needs of emerging customers or markets (Benner & Tushman, 2003). They create radical new designs, new markets, or channels of distribution (Jansen et al., 2006). Exploratory dynamic capabilities require new knowledge or a departure from existing knowledge (Levinthal & March, 1993; McGrath, 2001). Because this knowledge is new to the organization, it must originate from outside the organization. Therefore, exploratory dynamic capabilities originate from knowledge obtained from outside of the organization (McEvily & Zaheer, 1999; Zaheer & Bell, 2005). New knowledge from outside the organization would likely be obtained by one individual manager of the TMT via their network. This manager would then need to have some motivation to share it with the rest of the TMT (Adler & Kwon, 2002). If the new knowledge is not positively received, the individual manager would likely be subject to a loss of respect from the other TMT members. Thus, the manager will want to be sure that this new knowledge is compatible with the shared visions of the TMT before presenting it. From this we would anticipate that increases in cognitive social capital in the TMT will make it easier for the organization to implement new knowledge and create exploratory dynamic capabilities, so we can hypothesize that:

*Hypothesis 3. Cognitive social capital of a TMT will be positively related to exploratory dynamic capabilities of the organization.*

Structural Social Capital and Exploitative Dynamic Capabilities

The structural dimension of social capital involves the specific way actors are related and how often they interact. Because members of a TMT all belong to the same organization, there is a base level of structural social capital between the members. These formal connections between members provide the opportunity for knowledge exchange (Inkpen & Tsang, 2005). Structural social capital increases as the number of interactions between actors increases. The increasing number of interactions between TMT members allows them to gain specific knowledge about the abilities of the manager and their departments (Eggers & Kaplan, 2013). Moreover, as actors increase the interactions between them, they become more efficient in transferring knowledge; which is why structural social capital has been identified as having the most impact on improving execution related tasks (Moran, 2005).

Tacit knowledge (as opposed to explicit knowledge) is the knowledge that cannot be written down, is difficult to articulate and is generally acquired through experience (Nelson & Winter, 1982; Polanyi, 1966). In his study of the fashion industry Uzzi (1997) showed how the repeated interactions of individuals developed a trust between them creating the ability to transfer tacit knowledge better. Studies have also found that trust in the individual being competent in their job is important for the transfer of tacit knowledge (Levin & Cross, 2004). Since exploitative dynamic capabilities are generally about improving designs and increasing efficiency (Jansen et al., 2006), they are likely to be based on tacit knowledge.

Another part of the structural dimension of social capital is whether the actors, the TMT in this study, are all connected to the same individuals who are also connected to each other or if there are individuals that are connected to unique actors that are not

connected to others in the network of connections. The more the TMT is connected to the same individuals who are connected to each other, the more the network is a closed network (Burt, 1992). Closed networks have a high level of interactions between members and can become very efficient at transferring knowledge (Coleman, 1988). However, the closed structure can lead to redundant information (Burt, 1992), prevent contact with innovation information (Portes & Sensenbrenner, 1993), be unwilling to accept any type of differences (McPherson, Smith-Lovin, & Cook, 2001) or eventually lead to a reduction in group effectiveness (Oh, Chung, & Labianca, 2004). However, these negative effects are long-term issues of not accepting new information and not related to the short-term efficiency that structural social capital provides as the studies showing an erosion of performance related to TMT tenure had mean TMT tenures of between seven and nine years (Boeker, 1997; Wiersema & Bantel, 1992). In relation to this study, these effects show that high structural social capital could potentially have a negative effect on the creation of exploratory dynamic capabilities but should not impact the creation of exploitative dynamic capabilities.

Exploitative dynamic capabilities are capabilities that are used to compete in existing markets. They broaden existing knowledge and skills, improve designs, and increase efficiency (Jansen et al., 2006). Organizations using exploitative dynamic capabilities depend on existing knowledge from a number of domains such as strategy, marketing, and operations (van Wijk, Jansen, Van den Bosch, & Volberda, 2012). Thus, it is the TMT that uses this existing knowledge to reconfigure the assets of the organization to improve efficiency. Another way of saying this is the TMT uses their experience and knowledge to improve the execution of existing routines to create

dynamic capabilities. Based on this, we would anticipate that as interactions between the TMT increases, the structural social capital of the TMT will increase as will the amount of exploitative dynamic capabilities. Thus, we hypothesize that:

*Hypothesis 4. Structural social capital of a TMT will be positively related to exploitative dynamic capabilities of the organization.*

#### Relational Social Capital and Mediation

The relational dimension of social capital is expressed as the quality of the relationship between two actors because as social capital is created, the quality of the relationship between the actors improves. The quality of the relationships is often quantified as the amount of trust between actors, so where there is little relational social capital there is little trust, and where there is higher relational social capital, there is higher trust. There are many factors that impact the trust between TMT members, but one of the most important factors for this study is the belief that other TMT members are competent in performing their jobs. This belief in competence and building of trust contributes to effective resource exchange and the willingness to share information (Tsai, 2002). The building of trust is important for both incremental and radical innovations (Moran, 2005; Subramaniam & Youndt, 2005). Incremental and radical innovations have been used as measures for explorative and exploitative dynamic capabilities (Jansen et al., 2006). Trust has also been shown to act as a mediator between structural social capital and knowledge transfer (Levin & Cross, 2004). Some researchers have even called trust the most important driver of knowledge transfer (van Wijk et al., 2008). From this we would anticipate that increases in the relational social capital of the TMT will create an increase in trust between the TMT, which in turn will amplify both the

exploratory and exploitative dynamic capabilities created from the other social capital dimensions, so we can hypothesize that:

*Hypothesis 5a. Relational social capital of a TMT mediates the relationship between cognitive social capital and exploratory dynamic capabilities of the organization.*

*Hypothesis 5b. Relational social capital of a TMT mediates the relationship between structural social capital and exploitative dynamic capabilities of the organization.*



## CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

This chapter is divided into five sections. The first section provides an overview of the research design used in this study. The second section provides details for the sample and its generalizability. The third section describes the operationalized constructs and their measurement. The fourth section reviews the statistical analysis technique used and the support for their use in this study. Finally, the fifth section addresses potential common method variance concerns.

### Overview

This study used quantitative methods via the use of an online and paper-based survey. The survey instrument captured responses from a multi-industry sample of individuals that either are or report to the head of an organization or business unit and possessed the title of Director or higher. Where the survey was administered by paper, survey results were entered in the online response tool by the author.

### Sample

The sample for this study was compiled using three separate methods. The first method was via a personal email request to individuals who were known from prior interactions to be senior executives for their organization. Individuals who responded from this group identified two additional members of the executive team to be forwarded the survey. The second method was to contact 300 executives via regular mail from a list provided by the local county chamber of commerce. Individuals that responded to the survey were asked for two additional members of the executive team and email addresses

for both, so they could complete the online version of the survey. The third method of contact was an email request to 10,000 executives from 2,000 separate organizations whose contact information was purchased from a database marketing firm. The purchased list included organizations based in the United States that had over \$10 million in revenues, and where the database also included five individual contacts from the organization with titles of Vice President or higher. Respondents' job titles were individually reviewed for appropriateness before inclusion in the final sample.

Response and completion rates varied for the groups contacted. There were 30 individuals from the author's personal network that were contacted with a request to complete the survey during the summer of 2017. Slightly more than half of the individuals contacted completed the survey. However, several would not provide names or contact information for additional management team members. The total number of teams completing the survey from this pool was ten, with seven of the teams having three members complete the survey and three of the teams having two members complete the survey. From the group of 300 individuals contacted via regular mail in the fall of 2017, 31 individuals responded by completing the survey. Some of these respondents would also not provide names and contact information for additional management team members. From among those that did provide contact information, a total of 21 usable teams completed the survey with eleven teams having three members complete the survey and ten teams having two members complete the survey. The purchased contact list of 10,000 individuals had 288 persons initiate a survey response during the last quarter of 2017. From those responses that completed the survey, there were twelve pairs of individuals who were from the same organization and thus were considered a usable

team response. None of the organizations contacted had more than two of their five contacts complete the survey. For all groups contacted, any submitted responses that had incomplete data were removed from the final sample. Responses from the three groups totaled 104 individuals from 43 management teams with 18 teams having three members complete the survey and 25 teams having two members complete the survey.

T-tests were run for all three samples to confirm their similarity. F statistics ranged from 0.071, (first and second group gender) to 7.531 (first and third group tenure). Two tests were significant at the  $p < .05$  level, tenure for groups one and three ( $F = 7.531$ ,  $p = 0.008$ ) and gender for groups two and three ( $F = 4.149$ ,  $p = 0.045$ ). This indicates a significant difference between the two groups for those demographic categories.

Differences in samples is an indication that the sample is potentially not reflective of the overall population. Given the small sample sizes for all three groups, this issue was not unexpected and is one of the limitations of the study.

Demographics of the organizations and participants are shown in the table below.

Table 1. Responder Demographics

Responder Demographics			
Variable	Description	Number	Percentage
Gender	Female	29	28%
	Male	75	72%
Individual Tenure	Less than a year	8	8%
	1 - 3 years	16	15%
	3 - 5 years	11	11%
	5 -10 years	19	18%
	More than 10 years	50	48%

Table 2. Organizational Demographics

Organizational Demographics			
Variable	Description	Number	Percentage
Unit in Existence	0 - 5 years	4	9%
	5 - 10 years	2	5%
	10 - 15 years	4	9%
	15 - 20 years	7	16%
	More than 20 years	26	60%
Number of Employees	0 – 100	22	51%
	101 – 1000	17	40%
	1001 – 5000	1	2%
	5001 – 10000	3	7%
Industry	Manufacturing	9	21%
	Services	23	53%
	Technology	2	5%
	Transportation, Construction or Retail	1	2%
	Other	8	19%
Firm Revenue	\$1 Million to \$10 Million	13	30%
	\$10 Million to \$100 Million	18	42%
	\$100 Million to \$500 Million	7	16%
	\$500 Million to \$1 Billion	2	5%
	\$1 Billion and above	3	7%

## Constructs and Measurements

The survey for this study used established and modified scales for the dependent and independent variables. Each of the dependent and independent variables are described below and were measured with seven-point Likert scales unless noted otherwise.

### Dependent Variables

#### Dynamic Capabilities (Exploratory, Exploitative)

Dynamic capability creation was measured in terms of the perceived development of capabilities by the management team. The management team also provided their analysis of whether the capability was developed from new knowledge (exploratory dynamic capability) or was developed from existing knowledge (exploitive dynamic capability). The survey items come from Jansen et al. (2006) and are listed in the following table.

Table 3. Dependent Variables

Item	Dimension	Description
1.	Exploratory	Our unit accepts demands that go beyond existing products and services.
2.		We invent new products and services.
3.		We experiment with new products and services in our local market.
4.		We commercialize products and services that are completely new to our unit.
5.		We frequently utilize new opportunities in new markets.
6.		Our unit regularly uses new distribution channels.
7.	Exploitative	We frequently refine the provision of existing products and services.
8.		We regularly implement small adaptations to existing products and services.

9.		We introduce improved, but existing products and services for our local market.
10.		We improve our provision's efficiency of products and services.
11.		We increase economies of scale in existing markets.
12.		Our unit expands services for existing clients.

### Independent Variables

#### Social Capital (Relational, Cognitive, Structural)

The three dimensions of social capital were assessed at the team level in terms of the strength of the relationship (relational), shared language, interpretations, and representations (cognitive), and the properties of the network structure and the connections between team members (structural). The survey items come from van den Hooff and Huysman (2009) unless noted otherwise and are listed in the following table.

Table 4. Independent Variables

Item	Dimension	Description	Reference
1.	Relational	I feel connected to my colleagues.	
2.		I view this organization as a group I belong to.	
3.		I can rely on my colleagues when I need support in my work	
4.		I completely trust the skills of my colleagues	
5.		When I tell someone what I know, I can count on it that he or she will tell me what he or she knows.	
6.	Cognitive	My colleagues and I speak the same "technical" language.	
7.		Often I only need "half a word" when I am talking about work with my colleagues.	
8.		Sometimes I have difficulty formulating what I know so that my colleagues can understand. (R)	

9.		Team members agree on the best ways to ensure long-term success of the organization.	Atuahene-Gima and Murray (2007)
10.		Team members are in agreement about our goals and priorities.	Atuahene-Gima and Murray (2007)
11.		Our team shares the same ambitions and vision	Tsai and Ghoshal (1998)
12.	Structural	My colleagues know what knowledge I need.	
13.		I know what knowledge could be relevant to which colleague,	
14.		When a customer/client has a question, I know which colleague or department will be able to help.	
15.		Within my department, I know who has knowledge that is relevant to me at their disposal.	
16.		Outside my department, I know who has knowledge that is relevant to me at their disposal.	
17.		My colleagues know what knowledge I have at my disposal.	
18.		I am regularly in contact with colleagues who have knowledge at their disposal that is relevant to me.	

\*(R) = factors that are reverse coded

#### Control Variables

#### Industry Dynamism

Industry dynamism measures the perceived rate of change in the industry by the top management team. Industry dynamism has been shown to be an antecedent and a moderator to dynamic capabilities (Schilke et al., 2018). Thus, organizations operating in dynamic industries have been shown to create more dynamic capabilities. Therefore, industry dynamism was included as an important control variable to segregate the impact of social capital from industry dynamism. The individuals of the management team

provided their perception of the rate of change in the industry which was aggregated at the group level. The survey items and reference for this construct are shown in the table below.

Table 5. Control Variables

Item	Description	Reference
1.	Environmental changes in our market are intense.	(Jansen et al., 2006)
2.	Our clients regularly ask for new products or services	
3.	In our market, changes are taking place continuously	
4.	In the past year, nothing has changed in our market (R)	
5.	In our market, the volumes of products and services to be delivered change fast and often	

\*(R) = factors that are reverse coded

Because organizations with more resources have the potential to develop more capabilities, the study controlled for organization size using both total sales for the organization and number of employees (Coen & Maritan, 2011; Helfat & Peteraf, 2009). The study also controlled for the units' age as units that are older have more experience that can enhance capability development (Chen, Williams, & Agarwal, 2012; Pisano, 2000). A business unit is defined as that part of the organization that the TMT is responsible for managing. The business unit may be the entire organization, or it may be a portion of the organization. Similar to industry dynamism, these control variables were added to ensure that the impact of the social capital variables on dynamic capabilities was isolated from other variables that could theoretically impact the dependent variables. The control variables are consistent with other studies of exploratory and exploitative dynamic capabilities (Atuahene-Gima & Murray, 2007; Jansen et al., 2006).



Demographic data on the participants was also collected to identify gender and tenure with their organizations.

### Data Aggregation and Method

The hypotheses are tested at the team level however, the measures were collected via survey at the individual level from a single source. The suitability of aggregating the individual measures into team-level scores is shown in this section, and the potential issues with single-source data are addressed in the next section. Team values were calculated by averaging the individual scores. Averages were used because the functional relationship of the team level score for all constructs is a summation of the individual scores as opposed to a consensus or variance of scores (Chan, 1998). To clarify, each TMT member may have a different level of agreement with the variable question, but the accumulation of agreement (or lack of accumulation) shows a stronger likelihood of a positive (negative) team response than a consensus or variance calculation. The appropriateness of aggregating the responses into team-level scores was assessed by using inter-team-member agreement ( $R_{wg}$ ) and intra-class correlation coefficients ICC(1) and ICC(2) (Bliese, 2000; Bliese & Halverson, 1998; James, Demaree, & Wolf, 1984). All variables exceeded the minimum recommended value of 0.70 for  $R_{wg}$  (Chan, 1998; George & Bettenhausen, 1990). The negative ICC(1) values are a result of the mean squares within groups being higher than the mean squares between groups. A negative value is normally an indication that there is a lack of agreement between the members in a group. However, the distribution for these variables had a positive skew causing the group means to be clustered at the high of the scale reducing the between-group variance. The size of the groups being small also

impacted the calculation by increasing the variance on any difference between group members. The smaller variance between groups impacted the ICC(1) calculation along with the small group size and made it look like there is a lower level of agreement within the groups. The low ICC(2) values are caused by the low group sizes of the sample (average group size = 2.4) as the values are a function of ICC(1) and group size.

The Rwg and ICC results are shown in the table below.

Table 6. Rwg and Interclass Coefficients

	Rwg	ICC(1)	ICC(2)
Explorative Dynamic Capabilities	0.814	-0.008	-0.045
Exploitative Dynamic Capabilities	0.823	0.054	0.095
Relational Social Capital	0.898	0.217	0.371
Cognitive Social Capital	0.813	0.147	0.260
Structural Social Capital	0.890	0.145	0.285
Industry Dynamism	0.812	-0.024	-0.144

This study tested the direct relationship and possible mediation of that relationship between an independent variable and dependent variable. Since the relationships being tested were between a single independent variable and a single dependent variable with a possible mediating variable, linear multiple regression was an appropriate method.

#### Common Method Variance

Data was collected from the participants in the survey at a single point in time using self-reported scales, therefore common method variance (CMV) was a concern.

Common method variance is the difference in the measures that is attributed to the means of measurement that could impact responses in behavioral research (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012).

Acquiring data from alternative sources is known to reduce CMV, but due to the nature

of this study, it would be difficult to obtain this data from sources other than the TMT individuals. Only the TMT can attest to how many interactions they have and how they feel about those interactions. Additionally, dynamic capabilities are notoriously difficult to measure given their intangible nature (Wilhelm, Schlomer, & Maurer, 2015). With the critical role that the TMT plays in creating dynamic capabilities, they are best positioned to identify the organizational activities associated with the creation of dynamic capabilities. Since the best source of data for this study was from a single source, common method bias cannot be eliminated so steps needed to be taken to minimize the bias present in the study and the spurious variance associated with the bias. By limiting the variance associated with this bias the variance explained through the model becomes a more accurate reflection of the relationships. The following steps were taken to reduce the potential CMV effect: first, spatially and methodologically separating questions were used and second, multiple marker variables were used (Simmering, Fuller, Richardson, Ocal, & Atinc, 2015). There also were the use of post hoc techniques such as the Harman one-factor test and the inclusion of marker variables to show that CMV was not a significant threat to the results of this study (Harman, 1976; Siemsen, Roth, & Oliveira, 2010).

## CHAPTER FOUR: RESULTS

This chapter presents the quantitative results of this study. The first section describes the confirmatory factor analysis conducted and the generation of construct variables for the regression testing. The second section describes the process used to resolve skewness issues by normalizing the data. The third section presents the results of the Harman one-factor test and the marker variable tests to identify if common method bias was present in the study. The fourth section presents the results of the hypothesis testing. The quantitative results of this study were completed using IBM SPSS version 25 and conditional process analysis (Hayes, 2013).

### Confirmatory Factor Analyses

A confirmatory factor analysis (CFA) was performed using SPSS AMOS version 25 software to test construct validity of all key variables before testing the hypotheses. The first step in this process was to confirm model and construct validity by assessing goodness of fit measurements. Targeted levels of fit ratios for a structural model are as follows: CMIN/DF < 2.0, GFI > 0.90, AGFI > 0.90, and RMSEA < 0.08 (Hair, Black, Babin, Anderson, & Tatham, 1998). The initial indices for goodness of fit were not within the acceptable levels as they were as follows: CMIN/DF 2.043, GFI 0.522, AGFI 0.438, and RMSEA 0.158. To improve model fit, variables with factor loadings below 0.50 were examined for removal. Items removed were Cognitive Social Capital 3, Exploratory Dynamic Capabilities 1, Exploratory Dynamic Capabilities 5, and Structural

Social Capital 6. Two additional items were removed due to factor loadings being barely above the 0.50 target, Exploitative Dynamic Capabilities 5 and Structural Social Capital 1. These steps caused the CMIN/DF to drop to 1.869, achieving an acceptable level. The other fit indices did not achieve their targets and were at the following levels: GFI 0.605, AGFI 0.507, and RMSEA 0.143. At this point, all other factors had loadings well above the 0.50 target, so the focus moved to assessing construct validity and reliability.

Construct validity is assessed primarily through convergent validity, the extent that indicators share a high proportion of variance, and discriminant validity, the extent that a construct is distinct from other constructs (Hair et al., 1998). For convergent validity there are three measures: factor loadings, which should be 0.5 or higher and ideally more than 0.7; average variance extracted, which should be 0.5 or greater; and reliability, which should be above 0.7. Factor loadings exceeded 0.5 for all loadings, and 18 of 24 factors had loadings above 0.7. Average variance extracted (AVE) exceeded 0.5 for all constructs and all constructs had reliability above 0.7 as shown in the table below. Thus, convergent validity was achieved.

Table 7. Standardized Regression Weights (Loadings)

	Explorative Dynamic Capabilities	Exploitative Dynamic Capabilities	Relational Social Capital	Cognitive Social Capital	Structural Social Capital
Ore2	0.714				
Ore3	0.809				
Ore4	0.605				
Ore6	0.755				
Oit1		0.641			
Oit2		0.902			
Oit3		0.826			
Oit4		0.835			
Oit6		0.588			
Relat1			0.726		
Relat2			0.682		
Relat3			0.830		
Relat4			0.838		
Relat5			0.831		
Cog1				0.660	
Cog2				0.614	
Cog4				0.791	
Cog5				0.727	
Cog6				0.801	
Struct2					0.630
Struct3					0.730
Struct4					0.936
Struct5					0.812
Struct7					0.669
Average Variance Extracted	52.51%	58.99%	61.48%	52.17%	58.26%
Construct Reliability	0.81	0.88	0.89	0.84	0.87

Discriminant validity is determined by comparing the AVE for each construct with each of the corresponding squared interconstruct correlation estimate (SIC).

Discriminant validity is achieved if the AVE is larger than all of the corresponding SIC (Fornell & Larcker, 1981). As shown in the table below, discriminant validity is present except for explorative and exploitative dynamic capabilities and relational and cognitive social capital. The lack of discriminant validity between these two sets of constructs was not unexpected due to the theoretical similarity of the constructs. A review of the questions for each construct confirmed face validity, that questions were consistent with

the construct definition. The lack of discriminant validity for these constructs will be addressed in the limitations section.

Table 8. Discriminant Validity

Construct	Squared Interconstruct Correlations Average Variance Extracted on Diagonal				
	1	2	3	4	5
1. Explorative Dynamic Capabilities	0.525				
2. Exploitative Dynamic Capabilities	0.956	0.590			
3. Relational Social Capital	0.249	0.244	0.615		
4. Cognitive Social Capital	0.206	0.248	1.092	0.522	
5. Structural Social Capital	0.025	0.149	0.450	0.496	0.583

The last step in assessing construct validity and model fit was to examine path estimates, standardized residuals, and modification indices (Hair et al., 1998). The path estimates or loadings were reviewed earlier in the analysis with all items exceeding the acceptable minimum 0.50 level and 16 of 24 items exceeding the recommended minimum of 0.70. The standardized residuals for all items were within the accepted range of  $\pm 4.0$ , and the modification indices for all paths is less than 10 (Hair et al., 1998). Based on the overall assessment of model fit statistics, construct validity and reliability, discriminant validity, and diagnostic measures, no further factors were removed from the model. Descriptive statistics and correlations for all variables are shown in the table below.

Table 9. Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Explorative Dynamic Capabilities	4.73	1.57										
2. Exploitative Dynamic Capabilities	5.55	1.19	.704***									
3. Relational Social Capital	6.07	1.05	.303*	.418**								
4. Cognitive Social Capital	5.58	1.24	0.248	.405**	.892***							
5. Structural Social Capital	6.18	0.82	0.150	.353*	.669***	.671***						
6. Unit in Existence (years)	-	-	-0.115	0.023	-0.047	-0.064	-0.125					
7. # of Employees	-	-	-0.106	-0.210	-0.143	-0.143	0.057	0.179				
8. Organization's Revenue	-	-	-0.100	-0.161	0.029	-0.077	0.120	0.201	.752***			
9. Industry Dynamism	5.46	1.42	.495***	.562***	0.273	0.272	0.231	-0.129	-.341*	-.402**		
10. Blue	4.90	1.52	-0.274	-.349*	-0.045	-0.007	0.035	0.095	0.088	-0.098	-0.125	
11. Client	5.24	1.23	-.380*	-.347*	-.483***	-.498**	-.410**	-0.113	0.098	-0.075	-.313*	-0.047

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



### Data Normalization

After reviewing and analyzing the data for all survey questions, several variables were identified to have skewness and kurtosis above the accepted threshold of  $\pm 1.96$  (Hair et al., 1998). All items having skewness were identified as having negative skewness. As the plans for testing the hypotheses were to use regression which requires a normal distribution, the skewed data had to be normalized. Due to the level of negative skewness, a reflected logarithmic process was used to normalize the data (Osborne, 2005). To maintain consistency across all constructs, the reflected logarithmic process was used for all variables within each of the major constructs. The reflected logarithmic process transformed each variable by taking the logarithm of the maximum value for the variable plus one minus the individual response. One was added to the maximum value of the variable in order to avoid taking the logarithm of zero. After going through the reflected logarithmic process, all variables had skewness and kurtosis within the accepted levels for regression.

### Common Method Bias Assessment

Common method variance can occur in research using surveys when the same survey participant completes questions that load on both the exogenous and endogenous constructs. Common method bias can result from common method variance if the levels exceed a specific threshold. When using Harman's one-factor test, excessive common method variance exists when more than 50% of the variance is explained by one factor. This study passed Harman's one-factor test as the model fell below the maximum 50% loading since 30.7% and 34.1% of the variance was explained by one factor in the two models (One model with explorative dynamic capabilities as the dependent variable and

cognitive social capital as the independent variable and the other model with exploitative dynamic capabilities and structural social capital as the dependent and independent variables).

Also, marker variables were added to the survey that should have minimal correlation with the key constructs of the study. For this study, the variables blue attitude and customer delight were added as marker variables. These variables were chosen for their lack of theoretical connection to the key constructs for this study with blue attitude believed to be a more removed variable than customer delight due to the questions for customer delight having some similarity to the exploitative and exploratory dynamic capabilities questions. Correlations for both of the marker variables were run in SPSS to identify if the marker variables had significant correlations with the key constructs for the study. The marker variable of client delight had significant correlations with each of the social capital constructs and a few of the individual measures for exploitative dynamic capabilities indicating that it was not as independent as originally projected. The blue attitude marker variable performed better, but it too had a significant correlation with two of the exploitative dynamic capability factors and one of the factors for exploratory dynamic capabilities. These results showed that there was some common method bias in the dependent variables. Following Lindell and Whitney (2001) and Malhotra, Kim, and Patil (2006) a correlation matrix of variables was calculated and the two smallest correlations with the blue attitude marker were identified; using the second smallest correlation is a more conservative approach. The smallest correlation was with cognitive social capital ( $r = -.007$ ) and the second smallest correlation was with structural social capital ( $r = -.016$ ). The negative correlations were likely due to the social capital

variables being reflected as mentioned earlier (the blue attitude marker had negative correlations with all other constructs, see descriptive statistics table 9). The small amount of correlation between the two variables showed a minimal amount of common method bias is present in the results. Due to the small amount of common method bias present a revised correlation matrix adjusting for the bias found was not run.

### Hypotheses Analysis

In order to strengthen the validity of the factor scores to be used in the regression calculations, construct values were calculated using regression factor scores for each construct. Regression factor scores are a refined method of factor calculation that improve validity over non-refined methods such as summation scores (DiStefano, Zhu, & Mindrila, 2009). The earlier identification of common method bias would normally require the use of a common loading factor in the calculation of factor scores. The use of the common loading factors identifies the shared variance of common method bias and reduces the remaining factor scores for each variable. However, there was a large amount of cross loading between the social capital factors due to the theoretical similarity of the social capital dimensions. To eliminate the cross-loading issues with the social capital constructs, a separate factor analyses for each individual variable's remaining factors was run with the solution forced to a single factor. The coefficients generated through this process were used to calculate regression factor scores in SPSS for each of the main constructs. The regression factor scores were then used in the regressions for hypotheses testing. The following table presents the results of the regression analyses for relational social capital, exploratory dynamic capabilities, and exploitative dynamic capabilities.

Table 10. Regression Analysis

Hypothesis	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII	Model IX
Dependent Variable	Relational Social Capital	Relational Social Capital	Relational Social Capital	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities
Control Variables	Std Beta	Sig.	Std Beta	Sig.	Std Beta	Sig.	Std Beta	Sig.	Std Beta
Unit in Existence (years)	-0.029	0.849	-0.002	0.992	0.059	0.621	0.072	0.617	-0.008
# of Employees	-0.330	0.132	-0.205	0.057	-0.324	0.073	-0.008	0.933	0.002
Org Revenue	0.477	0.076	0.283	0.002	0.230	0.221	0.144	0.313	0.125
Industry Dynamism	0.321	0.057	0.082	0.295	0.114	0.395	0.338	0.001	0.396
Explanatory Variables									
Cognitive Social Capital			0.882	0.000					
Structural Social Capital									
Relational Social Capital			0.641	0.000					
Adj. R <sup>2</sup> / Sig.	0.082	0.171	0.086	0.000	0.444	0.000	0.185	0.008	0.177
F Statistic	1.696		35.796		7.697		3.379		2.801
AR <sup>2</sup>	0.152		0.677		0.358		0.282		0.012
Adj. R <sup>2</sup> / Sig.									
F Statistic									
AR <sup>2</sup>									
Dependent Variable	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities	Explanatory Dynamic Capabilities
Control Variables	Std Beta	Sig.	Std Beta	Sig.	Std Beta	Sig.	Std Beta	Sig.	Std Beta
Unit in Existence (years)	0.092	0.501	0.126	0.348	0.114	0.395	0.092	0.501	0.126
# of Employees	-0.157	0.439	-0.147	0.456	-0.084	0.683	-0.157	0.439	-0.147
Org Revenue	0.176	0.399	0.100	0.628	0.055	0.793	0.176	0.399	0.100
Industry Dynamism	0.591	0.000	0.511	0.001	0.489	0.002	0.591	0.000	0.511
Explanatory Variables									
Structural Social Capital			0.247	0.080	0.121	0.505			
Relational Social Capital					0.196	0.291			
Adj. R <sup>2</sup> / Sig.	0.230	0.003	0.310	0.002	0.312	0.003	0.230	0.003	0.310
F Statistic	4.866		4.768		4.18		4.866		4.768
AR <sup>2</sup>	0.339		0.053		0.019		0.339		0.053

N=13 for all models  
Adj. R<sup>2</sup>'s not available; see notes at the end of Chapter 4 for explanation

Support was found for both Hypothesis 1 and Hypothesis 2, the positive relationship between cognitive social capital and relational social capital ( $b = 0.862$ ,  $p < 0.001$ ) and the positive relationship between structural social capital and relational social capital ( $b = 0.641$ ,  $p < 0.001$ ), as seen in Models 2 and 3. Hypothesis 3 predicting a positive relationship between cognitive social capital and exploratory dynamic capabilities was not supported ( $b = 0.116$ , n.s.), as Model 5 showed that while the relationship was positive, it was not significant. Model 8 provided support for Hypothesis 4 ( $b = 0.247$ ,  $p < 0.1$ ), which predicted a positive relationship between structural social capital and exploitative dynamic capabilities. In addition to the predicted relationships of Hypotheses 3 and 4, Models 4 through 9 also showed that the control variable of industry dynamism has a positive and significant relationship with both exploratory ( $b = 0.538$ ,  $p < 0.01$ ) and exploitative dynamic capabilities ( $b = 0.591$ ,  $p < 0.01$ ). The other control variables of unit age and unit size (measured by revenue and number of employees) did not have significant relationships with any of the dependent variables.

To test the mediating relationships of Hypothesis 5a and 5b, the causal step approach (Baron & Kenny, 1986) and conditional process analysis (Hayes, 2013) were used. The first step in the causal step approach is to check that the direct relationship is significant, which was done in testing Hypotheses 3 and 4. As shown earlier, the direct relationship between cognitive social capital and exploratory dynamic capabilities (Model 5) was not found to be significant. In addition, the indirect effect via the mediator (Model 6) was also found to be insignificant ( $b = 0.320$ , n.s.). Thus, the causal

step approach does not support Hypothesis 5a. The direct relationship between structural social capital and exploitative dynamic capabilities (Model 8) was shown to be significant as part of Hypothesis 4 ( $b = 0.247, p < 0.1$ ). The indirect relationship via the mediator of relational social capital (Model 9) was not significant ( $b = 0.196, n.s.$ ). For the causal step approach, the indirect relationship being insignificant means there is no mediation and thus, no support for Hypothesis 5b.

The conditional process analysis method was developed to address some shortcomings with the causal step approach (Hayes, 2013). Under this method, a bootstrapping procedure that draws 5,000 random samples from the original sample is used to construct a confidence interval for the possibility of mediation. This approach does not support Hypothesis 5a as the indirect effect was positive but not significant ( $b = 0.276, n.s.$ ). Hypothesis 5b was also not supported as the indirect effect was positive but not significant ( $b = 0.125, n.s.$ ). Also, Sobel tests for both indirect paths were also not significant. Thus, there was no support for the mediation proposed in Hypotheses 5a and 5b.

An additional item that should be noted is the performance of adjusted  $R^2$  in the various models. Specifically, in models 4 through 6 adjusted  $R^2$  gets smaller with the addition of cognitive and relational social capital.  $R^2$  is a measure of how much of the variance in a dependent variable is explained by the independent variables. Adjusted  $R^2$  modifies the  $R^2$  measurement to take into account the number of independent variables being used and the sample size (Hair, 2010). The fact that adjusted  $R^2$  is getting smaller in models 5 and 6 is a signal that the addition of the independent variables of cognitive social capital and relational social capital are adding less explanatory power than random

chance. The lack of explanatory power for these variables is caused by two items: First, the highly significant relationship that industry dynamism has with exploratory dynamic capabilities is likely explaining most of the variance and, second, the multicollinearity of cognitive and relational social capital means that these variables are similar enough that when one of the dimensions is used as a variable that there is little to no incremental benefit to adding the second dimension.

## CHAPTER FIVE: DISCUSSION

This chapter consists of four sections. The first section discusses the results of the analyses presented in the previous chapter with additional details and the implications for managers and academics. The second section addresses the limitations of this study. The final section presents opportunities for future research.

### Further Discussion

This study proposed a positive relationship between TMT social capital and dynamic capabilities in an attempt to further define the impact of intrafirm social capital on dynamic managerial capabilities. The first part of this study was to show that the cognitive dimension of social capital and the structural dimension of social capital both had a positive relationship with relational social capital. Both hypotheses (H1 and H2) were supported which corroborated the earlier findings of Tsai and Ghoshal (1998), van den Hooff and Huysman (2009), and van den Hooff and de Winter (2011). They all found similar positive relationships when examining knowledge sharing and resource exchange. However, this study was unique in that it demonstrated the relationships in a new context, among the dimensions of social capital within a TMT. Finding the relationship between the dimensions of social capital in this study confirms that even for the TMT, as individuals increase their agreement on the goals and visions for the organization or gain knowledge about the abilities of each other's departments there is an increase in the connection and trust between them. The practical implication of this



finding is clear: removing silos and sharing knowledge along with openly discussing goals until there is agreement helps to improve the quality of the connection between individuals and strengthen their connection to the organization. It is quite possible that these activities would also have a positive association with trust and organizational culture.

The hypothesized positive relationship between cognitive social capital and explorative dynamic capabilities (H3) was not supported. What may be happening with this relationship is TMT members viewing their organization as developing new products and services in response to the changing environment, but not agreeing on whether they were the right new products and services to develop. Cognitive social capital is identified by TMT members sharing the same language and the same goals and visions for the organization and it could be reasoned that TMT members would need to agree on the level of industry dynamism before being able to agree on organizational goals. Thus, there could be agreement that the industry was dynamic and that the organization created new products and services but there was not agreement on the goals and visions of the organization. Hence, a stronger relationship between industry dynamism and exploratory dynamic capabilities than cognitive social capital and exploratory dynamic capabilities.

Danneels (2008) identifies an example of the possible relationship between cognitive social capital and explorative dynamic capabilities for new product development. His study looked at single segment manufacturing firms and identified environmental scanning and constructive conflict as antecedents to the creation of new product development dynamic capabilities. While constructive conflict is not the same as shared goals and visions, it could be argued that shared goals and visions do not come about

without some constructive conflict. Schilke (2014a) also identifies the impact that industry dynamism has on the ability to create explorative dynamic capabilities in alliance management and new product development processes.

The predicted positive relationship between structural social capital and exploitative dynamic capabilities (H4) was supported. Exploitative dynamic capabilities being identified by increasing the efficiency of producing current products and services along with improving and refining existing products. Improving and refining existing products requires the sharing of existing knowledge within the organization rather than gathering new information that resides outside of the organization. Thus, TMT members with knowledge of where relevant knowledge resides in the organization are going to be better at improving and refining existing products and services. Hence, structural social capital, the knowledge of where knowledge resides and what knowledge is relevant to colleagues or departments is related to the ability to improve and refine existing products and services otherwise known as exploitative dynamic capabilities. An example of this is in Bingham, Heimeriks, Schijven, and Gates (2015) study of Dow's acquisition process where the establishment of a PMO office gathered information that resided throughout the organization creating a dynamic capability by becoming more efficient in bringing on new acquisitions.

Both of the direct relationships between social capital and dynamic capabilities (cognitive-exploratory and structural-exploitative) were greatly impacted by industry dynamism whose relationship with both types of dynamic capabilities was significant. When industry dynamism was removed as a control variable, the cognitive social capital relationship became significant with exploratory dynamic capabilities ( $\beta = 0.339$ ,  $p =$

0.032) and the relationship between structural social capital and exploitative dynamic capabilities increased in significance ( $\beta = 0.441, p = 0.004$ ). These results suggest that industry dynamism may mediate both the cognitive social capital and explorative dynamic capabilities relationship and the structural social capital and exploitative dynamic capabilities relationship.

Previous studies have shown industry dynamism to have a direct relationship with dynamic capabilities as well as a moderating relationship (Piening, 2013; Schilke, 2014b). Schilke et al. (2018) point out that both positions are theoretically plausible depending on the level of rationality accorded to managers. The more rational managers are believed to be, the more likely industry dynamism is an antecedent to dynamic capabilities; conversely, the less rational managers are, the more likely industry dynamism is a moderator to dynamic capabilities. In a post hoc analysis of this study's data, there was no statistical support for industry dynamism acting as a moderator. However, the impact that industry dynamism had on both of the hypothesized direct relationships in this study and the variety of impacts it has had in previous studies makes industry dynamism a prime area of focus for future research.

The hypothesized mediating relationship of relational social capital to both exploratory and exploitative dynamic capabilities (H5a and H5b) were not supported. The strong relationship of industry dynamism to both types of dynamic capabilities was a clear factor in our not finding this predicted result, as was the strong correlation between the three dimensions of social capital. As mentioned earlier, industry dynamism acted like a mediator in a post hoc analysis of this study and would be worthy of future study as a possible mediator to the social capital – dynamic capability relationship. Another

possible mediator is trust in the TMT as a measure that is more specifically focused on trust within the group rather than relationship quality may be different enough from the other dimensions of social capital to act as a mediator.

Thus, the results of this study are similar to those of Atuahene-Gima and Murray (2007) and Land et al. (2012) where there is a relationship between the dimensions of social capital, industry dynamism (technological and market uncertainty in their studies) has a significant positive relationship with both explorative and exploitative dynamic capabilities, and there is some support for the relationship between the dimensions of social capital with exploratory and exploitative capabilities, however there is no support for the mediation tested for in this study.

#### Implications for Managers

While the results did not provide as much guidance for managers as was initially hoped for, there is some guidance for TMTs who are trying to improve performance through the development of dynamic capabilities. First, industry dynamism has a significant impact on the level of dynamic capabilities. For those who believe that managers are rational decision makers, this means that managers should pay close attention to the level of changes in their industry so they can keep pace with the rate of change. Even if managers are not completely rational, paying more attention to the rate of change in their industry should improve their chances of developing dynamic capabilities.

Second, this study provides guidance for managers on where to focus TMT activities depending on the type of dynamic capabilities needed. To develop an exploitative dynamic capability, the TMT should focus their efforts on sharing knowledge of each

other's departments to provide a better-shared understanding of each other's capabilities. Similarly, for an exploratory dynamic capability, the TMT should focus on a common vocabulary and on gaining agreement on the goals and strategic vision for the organization.

Lastly, as mentioned earlier, this study shows that there are benefits to gaining knowledge about the capabilities of other departments and gaining agreement on the goals for the organization. Both of these activities improve the connections of individuals within the organization with each other and build a stronger connection between the individual and the organization. While these actions are not easy, there are a number of potential benefits that arise from having a stronger connection and higher levels of trust with the organization.

#### Implications for Academics

The primary contribution of this study is that it further defines the interactions of the dimensions of social capital with the different types of dynamic capabilities. Specifically, a relationship between the structural social capital and exploitative dynamic capabilities of the organization was found. Additionally, the study found that industry dynamism had a strong impact on the relationship between social capital and dynamic capabilities.

The second contribution of this study is that it provided an exploration of the possibility of mediation in the relationships between the dimensions of social capital within the specific environment of a TMT. Other studies have shown that multiple dimensions of social capital can have significant positive relationships with a dependent

variable, but there has not been a prior investigation of mediation occurring within the dimensions of social capital (Hsu & Hung, 2013).

Another contribution of this study is that it further explored dynamic managerial capabilities and specifically investigated the relationship between managerial social capital and dynamic capabilities. In doing so, this study adds to the literature on the role the TMT plays as leaders of organizational performance. By looking at the intraorganizational social capital of the TMT, additional information was gained on how TMT characteristics impact decision making and ultimately the growth of the organization. This study also further identified the relationship between managers and their external environment. Thus, the findings of this study add to the literature showing the relationship between managerial actions and the creation of dynamic capabilities.

#### Limitations

There are several limitations of the study that merit discussion. First, as discussed earlier, common method bias is present in this study due to the use of single source data. While a number of steps were taken to minimize the impact of any common method bias, it was nevertheless present in the study. Given the difficulty of measuring intrafirm social capital and dynamic capabilities, this issue was not unexpected, and several steps were taken to identify and minimize the issue. The small amount of bias is cause for some caution but since the level found was so small, there should be no negative impact on the relationships that were found to be significant.

Second, endogeneity issues among the dimensions of social capital and dynamic capabilities cannot be ruled out. It is possible that the activities of creating exploitative dynamic capabilities boost the amount of structural social capital or that the activities

involved in creating exploratory social capital could increase the amount of cognitive social capital. It is also possible that an unknown outside factor is the force that impacts the use of a specific dimension of social capital creating the dynamic capability. For example, TMT members that have worked in multiple business units would have more knowledge about what information is relevant to other departments as well as where information that is relevant to them resides. Thus, it could be that the structural social capital relationship is being driven by the TMT member's prior experience instead of the number of interactions they have with other TMT members. Additionally, a lack of diversity in the TMT could be the force behind cognitive social capital as the lack of diversity would make it more likely the TMT all used the same language and had the same vision and goals for the organization. Therefore, some caution should be taken in linking the dimensions of social capital to exploratory and exploitative dynamic capabilities.

Third, this study collected data from a small number of top management teams and only two or three members of each team. Because the levels of social capital can vary for each person in the TMT, it is possible that the individuals that participated in this study represented only a minority view of the social capital within the TMT and that the actual social capital for the entire TMT was very different from the ratings provided by the participants. The TMT groups that participated were primarily from the southeastern United States and worked for smaller sized organizations. These factors limit the generalizability of the study. Fourth, the low response rate for the survey and the subsequent small sample size create limitations on the generalizability of the study. The low response rate was not unexpected due to the use of a survey of TMT members.

However, similar to other studies of this nature there is a concern with the low response rate that only a certain type of TMT member or a TMT member in a specific environment was willing to complete the survey negatively impacting generalizability. The resulting small sample size also creates a limitation by increasing the margin of error. This lack of statistical power makes it more likely that a significant relationship was rejected.

Another limitation of the study is the lack of discriminant validity present. There is insufficient discriminant validity between exploratory and exploitative dynamic capabilities and also between cognitive and relational social capital. This issue was not unexpected due to the theoretical similarities between the constructs. There is some concern that the lack of validity between the cognitive and relational dimensions of social capital is overstating the strength of that relationship, but the relationship should still be significant based on the number of studies previously showing the relationship between those dimensions to be significant. The lack of discriminant validity between the two dependent variables means that there is the potential that findings involving one of the dependent variables were actually due to the other dependent variable. While theoretical arguments were presented for why those relationships should not exist, there is a possibility the lack of discriminant validity impacted the results.

Lastly, the study measured the presence of dynamic capabilities via the perceptions of top managers. In addition to the potential for common method bias to exist, there is the added potential that managers perceived the performance of their organization to be much better than they actually were.



## Future Research Opportunities

There are several opportunities for future research from this study. First, further investigation into the relationships between social capital, industry dynamism, and dynamic capabilities is needed. While this study did not find the mediating relationships predicted for relational social capital, there were significant relationships between industry dynamism and both exploratory and exploitative dynamic capabilities. Future studies could investigate the possibility of moderated mediation occurring in the relationships among these variables. Second, in order to resolve the endogeneity issues raised and to help identify potential causality, a longitudinal study would be beneficial. Adding a temporal separation between the independent and dependent variables would remove some of the potential endogeneity issues and improve the likelihood of inferring causality. Also, an instrumental variable could be identified for use in regression or the Heckman two-step method could be used to correct for omitted variable bias. Lastly, to remove the potential common method bias as well as to reduce the weakness stemming from the use of perception measures for the dependent variables, future studies could use objective performance measures for the dependent variables. Examples of these measures for exploitative dynamic capabilities could be items such as the number of product modifications or updates, the amount of reduction in product cost, or the increase in market share or profitability for a specific product or service. For exploratory dynamic capabilities, the measures could be the number of new products introduced or new markets entered.

## REFERENCES

- Acquaah, M. (2007). Managerial social capital, strategic orientation, and organizational performance in an emerging economy. *Strategic Management Journal*, 28(12), 1235-1255. doi:10.1002/smj.632
- Acquaah, M. (2012). Social networking relationships, firm-specific managerial experience and firm performance in a transition economy: A comparative analysis of family owned and nonfamily firms. *Strategic Management Journal*, 33(10), 1215-1228. doi:10.1002/smj.1973
- Adler, P. S., & Kwon, S. W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17-40. doi:10.2307/4134367
- Adner, R., & Helfat, C. E. (2003). Corporate effects and dynamic managerial capabilities. *Strategic Management Journal*, 24(10), 1011-1025. doi:10.1002/smj.331
- Alexiev, A. S., Jansen, J. J. P., Van den Bosch, F. A. J., & Volberda, H. W. (2010). Top Management Team Advice Seeking and Exploratory Innovation: The Moderating Role of TMT Heterogeneity. *Journal of Management Studies*, 47(7), 1343-1364. doi:10.1111/j.1467-6486.2010.00919.x
- Ambrosini, V., & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management? *International Journal of Management Reviews*, 11(1), 29-49. doi:10.1111/j.1468-2370.2008.00251.x
- Amit, R., & Schoemaker, P. J. H. (1993). Strategic Assets and Organizational Rent. *Strategic Management Journal*, 14(1), 33-46. doi:10.1002/smj.4250140105
- Atuahene-Gima, K., & Murray, J. Y. (2007). Exploratory and exploitative learning in new product development: A social capital perspective on new technology ventures in China. *Journal of International Marketing*, 15(2), 1-29.

- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120. doi:10.1177/014920639101700108
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Barreto, I. (2010). Dynamic Capabilities: A Review of Past Research and an Agenda for the Future. *Journal of Management*, 36(1), 256-280. doi:10.1177/0149206309350776
- Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review*, 28(2), 238-256.
- Bingham, C. B., Heimeriks, K. H., Schijven, M., & Gates, S. (2015). Concurrent learning: How firms develop multiple dynamic capabilities in parallel. *Strategic Management Journal*, 36(12), 1802-1825.
- Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein, S. W. J. Kozlowski, K. J. Klein, & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. (pp. 349-381). San Francisco, CA, US: Jossey-Bass.
- Bliese, P. D., & Halverson, R. R. (1998). Group size and measures of group-level properties: an examination of eta-squared and ICC values, 157.
- Blyler, M., & Coff, R. W. (2003). Dynamic capabilities, social capital, and rent appropriation: Ties that split pies. *Strategic Management Journal*, 24(7), 677-686. doi:10.1002/smj.327
- Boeker, W. (1997). Strategic change: the influence of managerial characteristics and organizational growth. *Academy of Management Journal*, 40(1), 152-170. doi:10.2307/257024
- Burt, R. S. (1992). *Structural holes: The social structure of competition*: Harvard university press.

- Burt, R. S. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42(2), 339-365. doi:10.2307/2393923
- Burt, R. S. (2000). The network structure of social capital. *Research in Organizational Behavior*, 22, 345-423.
- Cao, Q., Simsek, Z., & Zhang, H. (2010). Modelling the joint impact of the CEO and the TMT on organizational ambidexterity. *Journal of Management Studies*, 47(7), 1272-1296.
- Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30(6), 749-778. doi:10.1016/j.jm.2004.06.001
- Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: a typology of composition models. *Journal of Applied Psychology*(2), 234.
- Chen, P. L., Williams, C., & Agarwal, R. (2012). Growing pains: Pre-entry experience and the challenge of transition to incumbency. *Strategic Management Journal*, 33(3), 252-276.
- Chua, R. Y. J., Morris, M. W., & Mor, S. (2012). Collaborating across cultures: Cultural metacognition and affect-based trust in creative collaboration. *Organizational Behavior & Human Decision Processes*, 118(2), 116-131. doi:10.1016/j.obhdp.2012.03.009
- Coen, C. A., & Maritan, C. A. (2011). Investing in capabilities: The dynamics of resource allocation. *Organization Science*, 22(1), 99-117.
- Coleman, J. S. (1988). Social Capital in the Creation of Human-Capital. *American Journal of Sociology*, 94, S95-S120. doi:10.1086/228943
- Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal*, 46(6), 740-751. doi:10.2307/30040665

- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology, 92*(4), 909-927. doi:10.1037/0021-9010.92.4.909
- Danneels, E. (2008). Organizational antecedents of second-order competences. *Strategic Management Journal, 29*(5), 519-543.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301-331. doi:10.1016/s0883-9026(02)00097-6
- Di Stefano, G., Peteraf, M., & Verona, G. (2014). The organizational drivetrain: A road to integration of dynamic capabilities research. *The Academy of Management Perspectives, 28*(4), 307-327.
- Diez-Vial, I., & Montoro-Sanchez, A. (2014). Social capital as a driver of local knowledge exchange: a social network analysis. *Knowledge Management Research & Practice, 12*(3), 276-288. doi:10.1057/kmrp.2014.7
- DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and Using Factor Scores&58; Considerations for the Applied Researcher. *Practical Assessment, 14*(20), 1-11.
- Eggers, J. P., & Kaplan, S. (2013). Cognition and Capabilities: A Multi-Level Perspective. *Academy of Management Annals, 7*(1), 295-340. doi:10.1080/19416520.2013.769318
- Eisenhardt, K. M., Furr, N. R., & Bingham, C. B. (2010). Microfoundations of Performance: Balancing Efficiency and Flexibility in Dynamic Environments. *Organization Science, 21*(6), 1263-1273. doi:10.1287/orsc.1100.0564
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10-11), 1105-1121. doi:10.1002/1097-0266(200010/11)21:10/11<1105::aid-smj133>3.0.co;2-e
- Fernandez-Perez, V., Garcia-Morales, V. J., & Bustinza, O. F. (2012). The effects of CEOs' social networks on organizational performance through knowledge and

strategic flexibility. *Personnel Review*, 41(5-6), 777-812.  
doi:10.1108/00483481211263719

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 39-50.

Fulmer, C. A., & Gelfand, M. J. (2012). At What Level (and in Whom) We Trust: Trust Across Multiple Organizational Levels. *Journal of Management*, 38(4), 1167-1230. doi:10.1177/0149206312439327

Gary, M. S., & Wood, R. E. (2011). Mental models, decision rules, and performance heterogeneity. *Strategic Management Journal*, 32(6), 569-594.  
doi:10.1002/smj.899

Geletkanycz, M. A., & Boyd, B. K. (2011). CEO Outside Directorships and Firm Performance: A Reconciliation of Agency and Embeddedness Views. *Academy of Management Journal*, 54(2), 335-352.

Geletkanycz, M. A., & Hambrick, D. C. (1997). The external ties of top executives: Implications for strategic choice and performance. *Administrative Science Quarterly*, 42(4), 654-681. doi:10.2307/2393653

George, J. M., & Bettenhausen, K. (1990). Understanding prosocial behavior, sales performance, and turnover: a group-level analysis in a service context. *Journal of Applied Psychology*(6), 698.

Gillespie, N. A., & Mann, L. (2004). Transformational leadership and shared values: the building blocks of trust. *Journal of Managerial Psychology*(6), 588.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 1360-1380.

Granovetter, M. (1985). Economic-Action and Social-Structure - The Problem of Embeddedness. *American Journal of Sociology*, 91(3), 481-510.  
doi:10.1086/228311

- Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, 49(4), 693-706.
- Gutierrez, L. J. G., & Perez, V. F. (2010). Managerial networks and strategic flexibility: a QM perspective. *Industrial Management & Data Systems*, 110(8-9), 1192-1214. doi:10.1108/02635571011077834
- Hair, J. F. (2010). *Multivariate data analysis*: Pearson College Division.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis*. Upper saddle River. *Multivariate Data Analysis (5th ed) Upper Saddle River*.
- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, 32(2), 334-343.
- Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *Academy of Management Review*, 9(2), 193-206. doi:10.5465/AMR.1984.4277628
- Harman, H. H. (1976). *Modern factor analysis*: University of Chicago Press.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*: Guilford Press.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2009). *Dynamic capabilities: Understanding strategic change in organizations*: John Wiley & Sons.
- Helfat, C. E., & Martin, J. A. (2015). Dynamic Managerial Capabilities: Review and Assessment of Managerial Impact on Strategic Change. *Journal of Management*, 41(5), 1281-1312. doi:10.1177/0149206314561301
- Helfat, C. E., & Peteraf, M. A. (2009). Understanding dynamic capabilities: progress along a developmental path. *Strategic Organization*, 7(1), 91-102. doi:10.1177/1476127008100133

- Helfat, C. E., & Peteraf, M. A. (2015). Managerial Cognitive Capabilities and the Microfoundations of Dynamic Capabilities. *Strategic Management Journal*, 36(6), 831-850. doi:10.1002/smj.2247
- Houghton, S. M., Smith, A. D., & Hood, J. N. (2009). The influence of social capital on strategic choice: An examination of the effects of external and internal network relationships on strategic complexity. *Journal of Business Research*, 62(12), 1255-1261. doi:10.1016/j.jbusres.2009.01.002
- Hsu, J. S. C., & Hung, Y. W. (2013). Exploring the interaction effects of social capital. *Information & Management*, 50(7), 415-430. doi:10.1016/j.im.2013.06.001
- Inkpen, A. C., & Tsang, E. W. K. (2005). Social capital, networks, and knowledge transfer. *Academy of Management Review*, 30(1), 146-165. doi:10.5465/amr.2005.15281445
- James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69(1), 85-98. doi:10.1037/0021-9010.69.1.85
- Jansen, J. J. P., Van den Bosch, F. A. J., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661-1674. doi:10.1287/mnsc.1060.0576
- Kilduff, M., & Brass, D. J. (2010). Organizational Social Network Research: Core Ideas and Key Debates. *Academy of Management Annals*, 4, 317-357. doi:10.1080/19416520.2010.494827
- Kor, Y. Y., & Mesko, A. (2013). Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. *Strategic Management Journal*, 34(2), 233-244. doi:10.1002/smj.2000
- Kostova, T., & Roth, K. (2003). Social capital in multinational corporations and a micro-macro model of its formation. *Academy of Management Review*, 28(2), 297-317.
- Kwon, S. W., & Adler, P. S. (2014). Social Capital: Maturation of a Field of Research. *Academy of Management Review*, 39(4), 412-422. doi:10.5465/amr.2014.0210



- Land, S., Engelen, A., & Brettel, M. (2012). Top management's social capital and learning in new product development and its interaction with external uncertainties. *Industrial Marketing Management*, 41(3), 521-530. doi:10.1016/j.indmarman.2011.06.007
- Levin, D. Z., & Cross, R. (2004). The Strength of Weak Ties You Can Trust: The Mediating Role of Trust in Effective Knowledge Transfer. *Management Science*, 50(11), 1477-1490. doi:10.1287/mnsc.1030.0136
- Levinthal, D. A., & March, J. G. (1993). The Myopia of Learning. *Strategic Management Journal*, 14, 95-112. doi:10.1002/smj.4250141009
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86(1), 114.
- Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and Performance in Small-to Medium-Sized Firms: The Pivotal Role of Top Management Team Behavioral Integration. *Journal of Management*, 32(5), 646-672. doi:10.1177/0149206306290712
- Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, 52(12), 1865-1883.
- March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1), 71-87.
- Martin, J. A. (2011). Dynamic managerial capabilities and the multibusiness team: The role of episodic teams in executive leadership groups. *Organization Science*, 22(1), 118-140.
- McEvily, B., & Zaheer, A. (1999). Bridging ties: A source of firm heterogeneity in competitive capabilities. *Strategic Management Journal*, 20(12), 1133-1156. doi:10.1002/(sici)1097-0266(199912)20:12<1133::aid-smj74>3.0.co;2-7
- McGrath, R. G. (2001). Exploratory learning, innovative capacity, and managerial oversight. *Academy of Management Journal*, 44(1), 118-131. doi:10.2307/3069340

- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415-444.  
doi:10.1146/annurev.soc.27.1.415
- Moran, P. (2005). Structural vs. relational embeddedness: Social capital and managerial performance. *Strategic Management Journal*, 26(12), 1129-1151.  
doi:10.1002/smj.486
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.  
doi:10.2307/259373
- Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*: Cambridge, MA: Harvard University Press.
- O'Reilly, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in Organizational Behavior*, 28, 185-206. doi:10.1016/j.riob.2008.06.002
- O'Reilly, C. A., & Tushman, M. L. (2011). Organizational Ambidexterity in Action: HOW MANAGERS EXPLORE AND EXPLOIT. *California Management Review*, 53(4), 5-22.
- Oh, H. S., Chung, M. H., & Labianca, G. (2004). Group social capital and group effectiveness: The role of informal socializing ties. *Academy of Management Journal*, 47(6), 860-875.
- Osborne, J. (2005). Notes on the use of data transformations. *Practical Assessment, Research and Evaluation*, 9(1), 42-50.
- Payne, G. T., Moore, C. B., Griffis, S. E., & Autry, C. W. (2011). Multilevel Challenges and Opportunities in Social Capital Research. *Journal of Management*, 37(2), 491-520. doi:10.1177/0149206310372413
- Phelps, C., Heidl, R., & Wadhwa, A. (2012). Knowledge, Networks, and Knowledge Networks: A Review and Research Agenda. *Journal of Management*, 38(4), 1115-1166. doi:10.1177/0149206311432640

- Piening, E. P. (2013). Dynamic capabilities in public organizations: A literature review and research agenda. *Public Management Review*, 15(2), 209-245.
- Pisano, G. P. (2000). *In search of dynamic capabilities: the origins of R&D competence in biopharmaceuticals*: Oxford University Press, Oxford, New York.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. doi:10.1037/0021-9101.88.5.879
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. In S. T. Fiske, D. L. Schacter, & S. E. Taylor (Eds.), *Annual Review of Psychology*, Vol 63 (Vol. 63, pp. 539-569).
- Polanyi, M. (1966). The tacit dimension London. *Google Scholar*.
- Portes, A., & Sensenbrenner, J. (1993). Embeddedness and Immigration - Notes on the Social Determinants of Economic Action. *American Journal of Sociology*, 98(6), 1320-1350. doi:10.1086/230191
- Prashantham, S., & Dhanaraj, C. (2010). The Dynamic Influence of Social Capital on the International Growth of New Ventures. *Journal of Management Studies*, 47(6), 967-994. doi:10.1111/j.1467-6486.2010.00904.x
- Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science*, 20(4), 685-695.
- Reagans, R., & McEvily, B. (2003). Network structure and knowledge transfer: The effects of cohesion and range. *Administrative Science Quarterly*, 48(2), 240-267. doi:10.2307/3556658
- Rumelt, R. P., Schendel, D. E., & Teece, D. J. (1994). Fundamental issues in strategy. *Fundamental issues in strategy: A research agenda*, 9, 47.

- Schilke, O. (2014a). The contingent value of dynamic capabilities for competitive advantage: the nonlinear moderating effect of environmental dynamism. *Strategic Management Journal*, 35(2), 179-203. doi:10.1002/smj.2099
- Schilke, O. (2014b). On the contingent value of dynamic capabilities for competitive advantage: The nonlinear moderating effect of environmental dynamism. *Strategic Management Journal*, 35(2), 179-203.
- Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of Management Annals*, 12(1), 390-439.
- Siemsen, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods*, 13(3), 456-476.
- Siggelkow, N., & Levinthal, D. A. (2003). Temporarily divide to conquer: Centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. *Organization Science*, 14(6), 650-669. doi:10.1287/orsc.14.6.650.24840
- Simmering, M. J., Fuller, C. M., Richardson, H. A., Ocal, Y., & Atinc, G. M. (2015). Marker Variable Choice, Reporting, and Interpretation in the Detection of Common Method Variance: A Review and Demonstration. *Organizational Research Methods*, 18(3), 473.
- Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2009). A Typology for Aligning Organizational Ambidexterity's Conceptualizations, Antecedents, and Outcomes. *Journal of Management Studies*, 46(5), 864-894. doi:10.1111/j.1467-6486.2009.00841.x
- Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal*, 48(2), 346-357.
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.

- Tasselli, S., Kilduff, M., & Menges, J. I. (2015). The Microfoundations of Organizational Social Networks: A Review and an Agenda for Future Research. *Journal of Management*, 41(5), 1361-1387. doi:10.1177/0149206315573996
- Teece, D. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350. doi:10.1002/smj.640
- Teece, D. (2014). The Foundations of Enterprise Performance: Dynamic and Ordinary Capabilities in an (Economic) Theory of Firms. *Academy of Management Perspectives*, 28(4), 328-352. doi:10.5465/amp.2013.0116
- Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509-533.
- Tsai, W. P. (2002). Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organization Science*, 13(2), 179-190. doi:10.1287/orsc.13.2.179.536
- Tsai, W. P., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, 41(4), 464-476. doi:10.2307/257085
- Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 35-67.
- Uzzi, B., & Lancaster, R. (2003). Relational embeddedness and learning: The case of bank loan managers and their clients. *Management Science*, 49(4), 383-399.
- van den Hooff, B., & de Winter, M. (2011). Us and them: a social capital perspective on the relationship between the business and IT departments. *European Journal of Information Systems*, 20(3), 255-266. doi:10.1057/ejis.2011.4
- van den Hooff, B., & Huysman, M. (2009). Managing knowledge sharing: Emergent and engineering approaches. *Information & Management*, 46(1), 1-8. doi:10.1016/j.im.2008.09.002
- van Wijk, R., Jansen, J. J. P., & Lyles, M. A. (2008). Inter- and intra-organizational knowledge transfer: A meta-analytic review and assessment of its antecedents and

- consequences. *Journal of Management Studies*, 45(4), 830-853.  
doi:10.1111/j.1467-6486.2008.00771.x
- van Wijk, R., Jansen, J. J. P., Van den Bosch, F. A. J., & Volberda, H. W. (2012). How firms shape knowledge to explore and exploit: a study of knowledge flows, knowledge stocks and innovative performance across units. *Technology Analysis & Strategic Management*, 24(9), 929-950. doi:10.1080/09537325.2012.718666
- Wang, C., & Ahmed, P. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, 9(1), 31-51. doi:10.1111/j.1468-2370.2007.00201.x
- Wang, C., & Chiang, M. J. (2009). Social interaction and continuance intention in online auctions: A social capital perspective. *Decision Support Systems*, 47(4), 466-476. doi:10.1016/j.dss.2009.04.013
- Wang, C., Rodan, S., Fruin, M., & Xu, X. Y. (2014). Knowledge Networks, Collaboration Networks, and Exploratory Innovation. *Academy of Management Journal*, 57(2), 484-514. doi:10.5465/amj.2011.0917
- Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35(1), 91-121. doi:10.2307/256474
- Wilden, R., Gudergan, S. P., Nielsen, B. B., & Lings, I. (2013). Dynamic Capabilities and Performance: Strategy, Structure and Environment. *Long Range Planning*, 46(1-2), 72-96. doi:10.1016/j.lrp.2012.12.001
- Wilhelm, H., Schlomer, M., & Maurer, I. (2015). How Dynamic Capabilities Affect the Effectiveness and Efficiency of Operating Routines under High and Low Levels of Environmental Dynamism. *British Journal of Management*, 26(2), 327-345. doi:10.1111/1467-8551.12085
- Wright, P. M., Coff, R., & Moliterno, T. P. (2014). Special Issue Editorial Strategic Human Capital: Crossing the Great Divide. *Journal of Management*, 40(2), 353-370. doi:10.1177/0149206313518437

- Zaheer, A., & Bell, G. G. (2005). Benefiting from network position: Firm capabilities, structural holes, and performance. *Strategic Management Journal*, 26(9), 809-825. doi:10.1002/smj.482
- Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies*, 43(4), 917-955.
- Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3), 339-351. doi:10.1287/orsc.13.3.339.2780