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The Relationship Between Organizational Knowledge Management Constructs and Organizational Flexibility

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Walden University

College of Management and Human Potential

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Marcus B. Williams

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2023

Abstract

The Relationship Between Organizational Knowledge Management Constructs and
Organizational Flexibility

by

Marcus B. Williams

MPhil, Walden University, 2020

MS, Capella University, 2011

BS, Illinois State University, 2008

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Management

Walden University

August 2023

Abstract

The role that the information technology (IT) department serves is governed by the corporate culture and how it values the use of knowledge, including IT, to achieve a strategic competitive advantage. The purpose of this quantitative study was to examine the potential relationships between information acquisition, knowledge dissemination, shared interpretation, organizational memory, and organizational flexibility. Two theories served as the theoretical foundation for this study: contingency theory and the resource-based view of the firm. To answer the question of possible correlation between organizational flexibility and components of knowledge management, a randomly selected sample of 193 IT professionals employed at small- and medium-sized enterprises from eight Midwestern states was presented a knowledge management questionnaire consisting of items that ask these professionals how their organizations prioritize different aspects of knowledge management. Regression analysis and bivariate correlation were used to determine whether a relationship exists between the dependent variable, organizational flexibility, and the independent variables: knowledge dissemination, shared interpretation, organizational memory and information acquisition. Flexibility had a positive correlational relationship with all variables, with information acquisition as the only statistically significant variable. IT managers will benefit from knowing what potential aspects of knowledge management act as barriers to organizational flexibility. Managers can take the information in this dissertation to facilitate knowledge management practices and influence positive social change within their organizations, given the constraints put upon them from the business side.

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Dedication

I would like to dedicate this dissertation to my family. First of all, my brothers and sisters who have put up with quite a bit from me over the last few years while I've been writing. They have been very supportive of me in my quest to go for the doctorate, and for that I thank them.

I would also like to dedicate this dissertation to my parents. Even though they're both long since passed, I would like to think that they'd be proud of me to have made it this far in my academic journey.

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Let me begin by thanking Dr. Elizabeth Thompson, my committee chair, for staying on me when it felt like there were times I'd just throw in the towel on writing this dissertation. At the beginning, I was completely lost on what I wanted to do and where I wanted to go with this, but she helped me figure out what I was passionate about enough to write something of this length and magnitude.

I would like to thank Dr. Michael Plantholt at Illinois State University, who was the first professor that gave me the idea that not only could I go to graduate school, but I could finish as well.

I'll thank Dr. Leslie Orr, who talked me out of doing an MFA in playwriting at ISU because she told me getting a degree in a STEM field was more important. I still write as a hobby, though.

I'd like to thank my brother Darrick and sister April, who were the most supportive of me as I continued to push forward and write. Through the writers' block and the times where I couldn't conjure up enough ideas to write down, they were there for me when I needed them.

Since I only have one page to do this, I'll devote this final paragraph to thanking everyone who contributed to help me in my journey to earn a doctorate and write this dissertation. Your efforts are acknowledged, and I'm glad that you're in my life in some way, shape, or form.

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Chapter 1: Introduction to the Study

Organizational culture is defined as the environment people work in, and this environment provides the framework that those people use to not only work in, but also to think and act (Anning-Dorson, 2021). Through organizational culture, members of the organization gain an understanding of the goals of the organization, what their role is in achieving those goals, and what the organization expects of its members in achieving those goals (Santos-Vijande et al., 2012). Members of the organization adopt the culture over time, conform to the rules of the culture (both written and unwritten), and develop a sense of togetherness using the common corporate culture and shared interpretation of organizational goals as a foundation. As organizations acquired knowledge, they eventually developed methodologies to control how that knowledge is spread throughout the organization (called knowledge dissemination), the shared interpretation of knowledge amongst employees, and how much of the employees' tacit knowledge becomes explicit knowledge to be stored for others to use as a reference, or the overall organizational memory. These methodologies become the organization's knowledge management system (Santos-Vijande et al., 2012; Shrafat, 2018).

Culture is usually shaped by the structure of the organization, and formalization was one of the key components of organizational structure (Dedahanov et al., 2017). Formalization is defined as the rules, norms, and protocols that organizations develop and adopt to influence and shape the behavior of their employees (Pertusa-Ortega et al., 2010). Knowledge sharing is an element of corporate culture that can contribute greatly to the success or failure of an organization (Matoskova et al., 2018), and formalization

governs how that knowledge is acquired, maintained, disseminated, and shared.

Employees who had high levels of trust with their coworkers were more inclined to share the knowledge they have with others and with the organization (Shateri & Hayat, 2020; Swift & Hwang, 2013). The acquired knowledge can be used to develop new products, processes and services that could assist the organization in either achieving or maintaining a competitive advantage in the marketplace (Chang & Lin, 2015).

Organizations could also use the knowledge acquired to counteract their competitors, adding to the strategic flexibility of the organization.

Organizational flexibility is typically defined as an organization's ability to identify internal and external changes in the marketplace and successfully adapt to those changes without severely negatively impacting competitiveness (Bamel & Bamel, 2018). To achieve flexibility, organizations must allocate and use their finite resources in such a way that maximizes their current market position and puts them in an advantageous situation to achieve market superiority, if such superiority has not been achieved already (Bamel & Bamel, 2018). This allocation of resources is called the resource-based view of the firm, which views organizations as a grouping of finite, unique resources that are used for competitive purposes (Barney, 1991). Using acquired knowledge to achieve flexibility comes from the concept of ambidexterity, which is the balance between supporting existing products (exploitation) and developing new products (exploration); both are needed to remain competitive (Selcer & Decker, 2012). Given the finite resources typically available to small- and medium-sized enterprises (SMEs), maintaining an ambidextrous strategy can be difficult, especially in organizations lacking the knowledge

capability to compete. Developing an organizational culture that values and encourages knowledge sharing can help organizations achieve or maintain a competitive advantage by being ambidextrous and highly flexible (Anser et al., 2022; Khan et al., 2021; Puriwat & Hoonsopon, 2022).

Over the course of this introductory chapter, the reasoning behind the selection of the proposed study will be presented, and different aspects of that reasoning will be explored as an overview to what the rest of the dissertation entails. The chapter begins with a discussion on the background of the study, going over some of the research that has already been completed in this area; this research will be elaborated on in the next chapter, the literature review. The purpose of the study will also be articulated, as well as the problem the study is designed to address. After identifying the pertinent research questions, a brief discussion about the theoretical underpinnings of the study follows. The middle third of the chapter is devoted to the nature of the study, the definitions of relevant terms, the pre-data collection assumptions I made, and both the limitations and delimitations of the study. The chapter closes with a detailed explanation on why the study is significant and a worthwhile endeavor to be pursued.

Background of the Study

The results of a study conducted by Gu et al. (2014) showed that environmental pressure acted as a moderating variable between organizational culture and information technology (IT) project performance. An inference could be made from the results that more firms in competitive industries would experience a greater effect on IT project performance than less competitive ones, even if their corporate cultures are similar.

Communication and knowledge sharing in project-based firms can lead to inefficiency, as shown in the study by Almeida and Soares (2014). They conducted a qualitative case study on a Portuguese firm specializing in research and development and found that the organization had set up information silos among project teams, hindering the dissemination of information. To remedy this, the authors developed a set of information management recommendations to follow for both during and after a project. The focus of the post-execution strategy rested on storing the information acquired during projects for long-term storage and retrieval so other teams have references to seek out during future projects (Almeida & Soares, 2014).

When a culture is set up to encourage innovation, it can benefit flexibility, as shown in the study by Bock et al. (2012). The authors conducted a study consisting of responses from over 100 chief executive officers of large, multinational firms. The results showed that a creative organizational culture had a positive effect on strategic flexibility, while reliance on a partner firm for innovation dropped the probability of achieving strategic flexibility by 31%. An inference could be made from the results of this study that corporate cultures that did not value developing in-house innovative concepts and instead outsourced that part of their business could be at a disadvantage as a competitor. The results of a Li et al. (2017) study showed that high resource flexibility led to a higher commitment to invest in innovation, while firms with high coordination flexibility engaged in resource acquisition at greater rates. These results show the contrast between firms that have the resources they need to innovate on their own, and those who must rely on a robust network of partners to acquire the resources they need to innovate.

Managers can play a role in how employees share knowledge as part of the organizational culture, and managers must work within their corporate culture to maximize the performance of their subordinates, highlighting how managers and culture work in an interdependent fashion. Research by Swift and Hwang (2013) and Van den Heuval et al. (2015) showed organizational cultures that did not make communication a priority among coworkers contributed to a lack of trust among them and an unwillingness to participate in the vital practice of knowledge sharing, which can give an organization a competitive advantage in the marketplace. Employee willingness to share knowledge and build enough trust in each other contributes to the body of knowledge that organizations use to remain competitive and flexible enough to adapt to changes in the marketplace (Huie et al., 2020). Marri et al. (2016) found that management support and organizational structure played a role in the success or failure of computer integrated manufacturing implementations in English SMEs. Research has shown that in some cases, the effort put in by management influences how organizations perform.

Flexibility can also be affected by the allocation of finite resources, especially when it pertains to IT performance. Ashrafi and Mueller (2015) used archived data to develop their model for predicting IT capabilities. Their model had three components:

1. Human resources.
2. Knowledge resources.
3. Relationship resources.

Human resources and knowledge resources refer to the personnel and the body of knowledge that personnel rely upon to develop ideas. The relationship resources refer to

the resources the business side of the organization provides to the IT side, including the personal relationships between the executives and IT leadership.

The research into the literature appears to indicate that studies on the possible correlation between organizational flexibility and organizational structure have been done on large firms and in other countries such as South Korea (Dedahanov et al., 2017) and Malaysia (Eze et al., 2013). Research has also been conducted on SMEs in the United Kingdom (Cosh et al., 2012). This study has been designed to address the gap in the literature that exists among SMEs in the United States.

Problem Statement

The general problem is that organizations with corporate cultures that were not conducive to knowledge sharing were not as flexible as others due to their inability to effectively utilize the knowledge they possess. Alternatively, because of not making knowledge sharing a priority, these organizations were unable to attract the workers with the knowledge needed to achieve or maintain a competitive advantage (Salameh & Zamil, 2020). The corporate culture could actively discourage employee innovative pursuits (Koohborfardhaghighi & Altmann, 2017) or it could facilitate knowledge sharing in such a way that improves the organization (Chion et al., 2020).

The specific problem is that the knowledge management culture within organizations and their IT departments influence the flexibility of these departments. The knowledge management culture affected the knowledge transfer, resource allocation and communication channels between business and IT (Fink & Sukenik, 2011; Oliviera et al., 2020; Tornjanski et al. 2020). The functionality of the IT department and its relative

value to the overall day-to-day operation of the firm was influenced by the corporate culture regarding knowledge management (Héroux & Fortin, 2018). The corporate culture that the organization created and developed potentially influenced how flexible and innovative the department can be, with increased flexibility leading to a higher level of adaptability when it comes to changes in the marketplace; thus, the organization would potentially be better positioned to react to dynamism in the environment (Fink & Sukenik, 2011; Weingarten et al., 2013). The influence of these knowledge management systems dictates how organizations acquire, manage, and disseminate their knowledge repositories. They help shape the culture of knowledge management that organizations use to govern how they prioritize and utilize knowledge, as well as determine the business roles for their individual departments with regards to knowledge management (Al-Alawi et al., 2022; Halisah et al., 2020).

Purpose of the Study

The purpose of this quantitative correlational study was to examine the relationship of knowledge management culture within organizations with their IT departments, and whether certain aspects of knowledge management culture influence the flexibility of those departments. This was done by correlating the dependent variable, organizational flexibility, with the independent variables of information acquisition, knowledge dissemination, shared interpretation, and organizational memory. The dependent variable, organizational flexibility, was measured using the average value of the strategic flexibility scale in Santos-Vijande et al. (2012), a 6-item construct measured in 7-point Likert-type scales. The dependent variables were the components of

knowledge management (information acquisition, knowledge dissemination, shared interpretation, and organizational memory), measured using 7-point Likert-type scales. The sample consisted of randomly selected IT professionals from small- and medium-sized organizations located in the Midwestern United States. Those in the sample were given a research instrument developed by Santos-Vijande et al. that will measure these variables using 7-point Likert-type scales. Because of the potential to skew the data due to its potential to affect organizational effectiveness (Vij & Farooq, 2016), age of the organization was set as a control variable and was controlled in the study. Both firm age and size were moderating variables with respect to the effectiveness of organizations using knowledge (Vij & Farooq, 2016), but firm size was already being limited due to the parameters of the population and sampling frame.

Research Question and Hypotheses

The main research question is: What is the correlation between organizational flexibility and the components of knowledge management in IT departments in SMEs in the Midwestern United States?

Null hypothesis: There are no statistically significant components of knowledge management that have an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations.

Alternative hypothesis: There is at least one statistically significant component of knowledge management that has an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations.

Sub-hypothesis 1: Information acquisition has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 2: Knowledge dissemination has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 3: Shared interpretation has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 4: Organizational memory has a positive correlational relationship with organizational flexibility.

Theoretical Foundation

There were two theories that served as the foundation for this study. The first is contingency theory, which states that organizations are structured based on their surroundings, and as their surroundings change, so do their structures to better adapt to the new situation (Hatch & Cunliffe, 2006). This thought process also shapes how corporate cultures are developed and how knowledge is disseminated throughout the organization (Rialti et al., 2020). The seminal work of Burns and Stalker (1961) developed the organic-mechanistic continuum, which had mechanistic and organic organizations at opposite ends of a spectrum, the thought process being that all organizations fall somewhere in between. The organic organization featured flatter hierarchical structures, decision-making input from virtually everyone in the organization, and a focus on personal enrichment over profits (Swift & Hwang, 2013). The mechanistic organization had a rigid top-down authority structure, strict protocols on information sharing, and an emphasis on efficiency and incentive-based employee

competition (Tyssen et al., 2014). This theory relates to the study because organizations develop a culture based on the organizational structure that sits at its foundation. Included in this culture are the norms and protocols that pertain to the knowledge management process. While some organizations put a premium on listening to what their employees have to contribute no matter where they are in the company hierarchy, others prefer to restrict the decision-making process to just a few individuals (Zheng et al., 2013). The four components of knowledge management as stated and defined by Santos-Vijande et al. (2012): information acquisition, knowledge dissemination, shared interpretation, and organizational memory, are all influenced by how the corporate culture values knowledge. Furthermore, since knowledge is used to generate new ideas for products and services, the contingent structure of the organization could also affect how flexible the organization can be when responding to changes in the marketplace (Pertusa-Ortega et al., 2010).

The second foundational theory used in this study was the resource-based view of the firm, or RBV. The RBV is defined by Barney (1986) as the methodology an organization used to allocate the resources at its disposal in a way that kept the organization competitive in the marketplace or achieved a strategic competitive advantage. The relationship between the business side and the IT side of the organization, often called the business/IT alignment, is part of this allocation of resources. The business assigns a general function to IT based in part on the corporate culture that it cultivated and the views of its decision makers; resources are allocated to the department based on this culture-defined function (Fink & Sukenik, 2011). How the company views

IT played an important part in how much support it was given by the organization, so business and IT have to be in agreement with each other on what the IT department can do to help the business maximize performance and achieve its stated goals (Saberwhal et al., 2019). This also ties into organizational flexibility, since the IT department can develop innovative concepts that could lead to new products and services. These innovative concepts can help the organization achieve a competitive advantage over industry rivals (Gupta et al., 2018).

Nature of the Study

The overall research design was a correlational study, using a data collection instrument. The knowledge management instrument from Santos-Vijande et al. (2012) was used in this study. This instrument was used to measure the dependent variable, flexibility, represented by the average value of the strategic flexibility scale. The instrument also measured the four independent variables pertaining to knowledge management by using the average value of all items in each construct (11 for information acquisition, 7 for knowledge dissemination, 7 for shared interpretation, and 7 for organizational memory). The correlational design was chosen because investigating the potential correlation between variables was the primary goal of the study, as shown by the research sub-questions. Regression analysis was used to test the statistical significance of the independent variables, which effectively answered the main research question of the study.

The study population consisted of all IT professionals, while the sampling frame consisted of IT workers and managers in SMEs in the Midwest. Participants making up

the sample were randomly chosen from the sampling frame using systematic random sampling, with the sampling frame chosen using LinkedIn search engine results from narrowly searching for IT workers at Midwestern firms of under 1000 employees, which is the threshold used by the United States Small Business Association (2019) for SMEs. SurveyMonkey Audience was used as a supplement to identify additional eligible people to be part of the sample if an insufficient number of people are obtained via LinkedIn; those selected using this method were chosen randomly. All items in the research instrument were measured in 7-point Likert scales. There were two types of items included in the research instrument for the respondents to answer: their level of agreement with culture statements pertaining to their organization's knowledge management policies, and how quickly their organization responds to internal and external changes. There were demographic questions at the end of the questionnaire for categorical purposes that were measured nominally or ordinally.

The dependent variable of the study was flexibility, which was measured by the strategic flexibility scale. There were four independent variables: information acquisition, knowledge dissemination, shared interpretation, and organizational memory. All variables were measured using 7-point Likert scales. The study is quantitative in nature because it is designed to examine a possible correlation between organizational flexibility and organizational structure and culture in SMEs in the Midwestern United States, using dimensions of knowledge management as a measure for organizational culture. For the purposes of this study, this region consists of eight states: Illinois, Indiana, Wisconsin, Minnesota, Iowa, Missouri, Michigan, and Ohio.

Definitions

Information acquisition: The act of acquiring knowledge from both internal and external sources (Santos-Vijande et al., 2012).

Knowledge dissemination: The act of distributing acquired knowledge throughout members of an organization, either from a centralized knowledge repository or from person to person (Santos-Vijande et al., 2012).

Organizational flexibility: The dynamism an organization exhibits when it responds to both internal and external changes to its environment. These changes can also include a reallocation of resources to better position the organization to be competitive (Brozovic, 2018; Santos-Vijande et al., 2012).

Organizational knowledge: The amount of information that an organization has accumulated over time and stored as explicit knowledge for use in the future. This information is acquired through tacit knowledge contributions from members of the organization (Koohborfardhaghighi & Altmann, 2017).

Organizational memory: The act of committing newly learned knowledge to the permanent body of knowledge in an organization. This involves taking tacit knowledge contributions from members of the organization and converting it into explicit knowledge to put in the repository for future reference (Santos-Vijande et al., 2012).

Organizational structure: How an organization is arranged with respect to its internal relationships, its chain of command, and its short- and long-term business goals (Fredrickson, 1986; Koohborfardhaghighi & Altmann, 2017).

Shared interpretation: What is achieved when members of an organization agree on what the knowledge they have acquired means, why it is important to know, and how to interpret the meaning of that learned knowledge in their own words (Santos-Vijande et al., 2012).

Assumptions

There were two sets of assumptions. The first set are those that are typically common with quantitative studies using random sampling. The sample was assumed to have been randomly selected, with each member of the sampling frame having an equal chance of being selected for participation in the sample. The independent variables were assumed to be indeed independent and not a linear combination of the other variables included in the study; they are also assumed to each be normally distributed. The variances of the independent variables are also assumed to be equal (Tabachnick & Fidell, 2013).

The second set of assumptions were study specific. The age of the firms that employ the IT professionals included in this study was a control variable and assumed to be constant. This is because firm age acts as a moderating variable between organizational effectiveness and information utilization in organizations (Vij & Farooq, 2016). Including firm age in the study could potentially skew the results. Firm size also acts as a moderating variable (Vij & Farooq, 2016), but by limiting the study to only include small- and medium-sized firms, setting firm size as a control variable is superfluous. There is also the assumption that those included in the sample are a representation of the population being studied.

Scope and Delimitations

The proposed study had a limited scope, focused on IT professionals working for SMEs in the Midwestern United States. The study was designed to leave open the possibility for future researchers to use its parameters for further research with broader scopes, since the variables chosen for the study are not necessarily unique to small firms. The design was a delimitation due to the small number of variables included in the study. Only four independent variables were included, and these variables did not address the other ways organizational culture affects flexibility beyond knowledge management. Another delimitation was the period of time that the research for the study is taking place.

Measuring flexibility by using the strategic flexibility scale in Santos-Vijande et al. (2012) was chosen due to the multiple dimensions used. Santos-Vijande et al.'s instrument focuses on how well their organizations respond to new competitor entries, the change in consumer tastes, technological changes, and economic changes, as well as threats and potential business opportunities. Resource allocation played a major role in how well-equipped an organization is when it comes to responding to changes in the marketplace (Barney, 1991) and how innovative an organization can be (Li et al., 2017). The RBV applies in this regard.

The inclusion of knowledge management dimensions tied into innovation and flexibility in two ways. First, knowledge management within an organization is influenced by its structure (Mahmoudsalehi et al., 2012), and its culture (Alrawi et al., 2011; Auernhammer & Hall, 2014). This means that how knowledge is acquired, stored, and shared is governed by how important the organization views the possession of

knowledge, and how the dissemination of that knowledge is shared throughout the organization (Chen et al., 2010; Gu et al., 2014). This is where contingency theory comes into play, since the corporate culture largely comes from what its decision makers deem a priority, such as the acquisition, management, and dissemination of knowledge. Where an organization lies on the mechanistic-organic continuum sets the foundation that the corporate culture is built upon (Burns & Stalker, 1961). Both structure and culture affect both the business role of IT (Fink & Sukenik, 2011), but how effective the department can be overall, given the inherent constraints from the business side (Carcary et al., 2015). Organizational knowledge could then be potentially used to develop innovative new products and services; this also affects how flexible an organization can be when it comes to responding to its competition (Büschgens et al., 2013). The independent variables of information acquisition, knowledge dissemination, shared interpretation, and organizational memory were aspects of the research instrument used by Santos-Vijande et al. (2012), investigating how organizational learning affects organizational performance and flexibility. All of these variables were measured using 7-point Likert scales.

Limitations

There were limitations to this study that were beyond my control. The willingness of respondents to be part of the study was a major concern. While the study was completely voluntary to participate in, respondents who were selected were given the option to opt out at any time during the process. This could become a problem if an overwhelming majority of those selected decide to opt out, but this study had a

considerably low number of opt outs. Another limitation was the openness and honesty of the participants, as there was no way to determine if their responses to the items in the instrument would be truthful. There had to be an element of implicit trust that the respondents would answer truthfully.

Significance of the Study

Significance to Theory

With respect to contingency theory, this study was designed with the goal of investigating whether the corporate culture of organizations via their knowledge management protocols affect the flexibility and innovative pursuits within an organization by examining its effects on firms that generally are not as complex as larger corporations, namely small- and medium-sized firms. Smaller firms are usually more flexible by design, due to their simpler organizational structures (Bentinelli et al., 2017; Broekaert et al., 2016), but they can also suffer from flexibility problems if the corporate culture is based on a high level of familiarity with one another, such as in family-owned firms (Broekaert et al., 2016). The smaller number of employees could potentially make knowledge sharing easier (Eze et al., 2013), and a managerial focus on knowledge sharing could have a positive impact on the use of IT within the firm (Raymond et al., 2018). These factors together could potentially influence the innovative pursuits of the organization and make the firm a more effective competitor in the marketplace (Zaridis & Mousiolis, 2014). By identifying what aspects of organizational culture have the greatest impact on flexibility, the readers were given information that can be taken back to small firms so they refine their knowledge management principles. Key decision makers within

these organizations can use the information from this study to determine what aspects of their knowledge management protocol is potentially hindering its flexibility, and formulate strategies to rectify the situation (Tiller, 2012).

The RBV, being the second theory used as the foundation for this study, is also significant. Starting with the idea that organizations allocate their finite resources in ways that help them compete, this study was designed to examine how IT departments, and the businesses they are a part of, work together to improve the flexibility of the organization through the effective use of organizational knowledge. This comes from understanding the business role of IT (Fink & Sukenik, 2011; McFarlan, 1984) and how that business role affects the day-to-day function of the IT department. The business role is assigned to IT based on its importance to the organization, and corporate culture influences the choosing of that role (Orlikowski & Robey, 1991; Saberwhal et al., 2019). The norms and protocols of the IT department are developed with the existing corporate culture as its foundation, and it dictates how the department will operate as a subsystem within the overall corporate system (Marshall et al., 2011). The business/IT alignment is also significant, since this is how IT and the business side communicate with each other (Jorfi et al., 2011; Turulja & Bajgorić, 2016). There was a better understanding of how small and medium-sized firms use their IT departments to achieve a strategic competitive advantage and how those IT departments work within their given constraints to maximize the use of their resources and assist firms in achieving that advantage.

Significance to Practice

The practice of knowledge sharing within an organization could be potentially improved as a result of this study, and the policies that govern how knowledge is stored, shared, and acquired could also be affected. Research has shown that organizational culture plays a role in how knowledge is shared within an organization (Chang & Lin, 2015; Mahmoudsalehi et al., 2012). Culture also affects how knowledge is created within an organization (Wang et al. 2011), as well as how it is disseminated (Tang et al., 2010). Creating a culture that values knowledge sharing could contribute to the overall body of knowledge of the organization, which in turn could produce innovative products and services that help the organization achieve a competitive advantage (Alrawi et al., 2011).

Significance to Social Change

As one of the target audiences of this study, IT leaders could use the information presented here for positive social change in their unique role as change agents within their organizations. IT managers can affect change in different ways: as facilitators, as repositories of information, as coaches, and as counselors in times of organizational turbulence (Westover, 2010). IT managers may understand how the business/IT alignment guides their departments from a macro sense, and how the business role assigned to their departments can and will change as the needs of the organizations change. Taking this into account, the manager can then develop leadership strategies and techniques to implement the organization's view at the micro level. They will work within organizational constraints to encourage employees to share information with each

other, contribute to the overall body of knowledge, and use the resources allocated to them to make their departments as productive as possible (Barratt-Pugh et al., 2013).

IT managers are tasked with making their departments key assets to the organization, no matter what role the business side assigns to it. Their role as the department's chief liaison to the business side means that maintaining the business/IT alignment is vital toward not only understanding what the stated business goals are, but how to go about achieving them as well. Keeping the avenue of communication open between business and IT is also part of knowledge management, as IT managers can use this channel of information to make their departments more effective and productive (Barratt-Pugh et al., 2013). The information included in this study can assist IT managers in pinpointing weak spots in the knowledge transfer system and use their positions as leaders to facilitate the free transfer of knowledge (Paghaleh et al., 2011). Employee trust is necessary to encourage the sharing of ideas with both other employees as well as managers within the organization (Swift & Hwang, 2013; Van den Heuvel et al., 2015), so it is up to the manager to help their subordinates build that trust and make them feel valued so the organization can benefit.

Summary and Transition

Considering the importance of competitive advantage in the marketplace, developing products and services that consumers demand more than others is not only lucrative financially, but also helps a company build an identity synonymous with innovation in the eyes of the public (Rockwell, 2019). The problem is that organizations may be set up in such a way that inhibits their ability to grow and adapt to their

surroundings. The infrastructure may be such that stunts creativity and innovation, or the culture that has developed discourages innovative ideas from making their way up the chain of command to the key decision makers. Organizations do not generate all their ideas from those at the top; inspiration can come from different places, including ideas from ordinary employees (Martinez-Leon & Martinez-Garcia, 2011). Ramendran et al. (2013) found that employee productivity is influenced by organizational flexibility; the implications being that flexible organizations have more productive employees.

Managers act as the intermediaries, and regarding IT, IT managers can assist their departments in becoming valued parts of the organization by maximizing the resources they are given and encouraging their subordinates to share valuable, innovative information with each other and with their managers (Cui et al., 2015; Mao et al., 2016).

The study included in this dissertation has been designed to correlate knowledge management constructs with organizational flexibility. This introductory chapter included some of the basic information behind why the study was devised and an argument as to why it should be conducted. In the next chapter, the theoretical framework is discussed in more detail by reviewing the literature, including the seminal research that these theories were founded upon. There is also a discussion about why the variables included in this study were chosen and why they are important to answering the research questions posed.

Chapter 2: Literature Review

In this second chapter, a review of the literature will be presented. After a brief discussion on the literature search strategy used to retrieve the research materials used in the literature review, the theoretical framework of this study is presented in considerable detail. Starting with the foundational work of Burns and Stalker (1961), contingency theory is discussed first, including why organic and mechanistic organizations use their structures as the foundation that the organization is built on. There will be a focus on how structure shapes the culture of an organization, and how organizations use their structure to adapt, or in some cases fail to adapt, to the changing environment around them. The second section reviews the literature regarding the RBV, a theory that treats organizations as a composition of the resources they can acquire, manage, maintain, and utilize to achieve a competitive advantage in the marketplace. Beginning with the foundational work of Barney (1986, 1991), the discussion addresses the impact of the RBV on the business/IT alignment. This alignment dictates the business role or functionality assigned to the IT department; it also affects how the business side allocates resources to the IT department and how the IT department uses the resources it is given. The section concludes with a brief discussion on ambidexterity and flexibility, and how the RBV and business/IT alignment can potentially affect how flexible an organization can be. These two theories together form the framework and background of the study.

Using that framework, the final two sections comprise the literature review. The third section includes an overview of the literature on organizational culture, its influence on innovation within an organization, and its potential impact on the knowledge

management protocols within an organization. This section wraps up with a look at the social change aspect of the study, focusing on the role of the IT manager as a change agent. In the fourth and final section, a review of the literature directly on the topic of the study will be presented.

Literature Search Strategy

During the process of compiling the references for the literature review, I used search queries that were related to organizational structure, organizational flexibility, a related topic, or some combination of the two, using the Boolean operators “AND” and “OR” to broaden the search results without adding too many unrelated entries. There were several primary search queries used for compiling references, such as “*organizational structure*” AND “*flexibility*”, “*organizational flexibility*”, “*strategic flexibility*” AND “*information technology*”, “*organizational structure*” AND “*innovation*”, and “*organizational structure*” AND “*knowledge management*”, “*organizational structure*” OR “*organizational culture*”, “*organizational culture*” AND “*knowledge*” OR “*innovation*”, “*knowledge management*” AND “*organizational culture*”, “*knowledge management*” AND “*formalization*”, “*organizational culture*” AND “*knowledge sharing*”, and “*organizational culture*” OR “*organizational structure*” AND “*knowledge sharing*.”

The literature search tools consisted primarily of the Walden University online library, the Capella University Alumni online library (I am an alum of Capella), Google Scholar, and the reference lists of the references gathered in these three places. Using these reference lists, I was able to expand the search for new references by identifying the

material that the authors of the selected references used for their studies. Within these online search tools, databases such as Business Source Complete, Sage Journals, and Computer and Applied Sciences Complete were used to investigate further for references and scholarly literature.

To be considered for inclusion, references had to be published in peer-reviewed journals only. Management and management-science related journals were given priority over others, so the references selected had relevance to the research topic. The focus was placed on journal articles published within the last 10 years, but those articles published within the last 7 years were given higher priority for timeliness purposes. For the recent research section of the literature review, the literature search was limited to the same 7-year time frame, but references published within the past 5 years were given a higher priority. Foundational material and seminal works had no publishing cut-off date.

Theoretical Foundation

Contingency Theory Background and Seminal Works

One of the most important theories in both management and organization theory is contingency theory. It is defined, according to Hatch and Cunliffe (2006), as an organizational design that is dependent on a multitude of factors; these factors include the competitive environment, the stated goals of the organization, technological capabilities, and human resources, among others. To put it succinctly, the structure of an organization is contingent on these factors, and the organization shapes itself dynamically as a response to these factors. The origins of this theory can be found in the seminal work of Burns and Stalker (1961) and their book, *The Management of Innovation*. In the book, the

authors argued that there is no singular way to effectively organize a firm for peak performance and competitiveness in the marketplace. Therefore, contingency theory changed the idea of management structure from a static concept to a dynamic one. Burns and Stalker asserted that all organizations fit somewhere on a continuum between the mechanistic and organic organizational structures. Some organizations are more organic, while others are more mechanistic. Other organizations may exhibit a complex mix of both. The structure of the organization, as stated before, would be contingent on the internal and external environment, and based on those factors, the organization in question would lean further in one direction rather than the other.

On one extreme end of the continuum sat the fully organic organizational structure. These organizations featured flatter hierarchies, and leader encouragement of information sharing. As Duncan (1979) asserted, organizations are structured in this way for two reasons: to establish an effective flow of information to assist managers with decision making and to create an efficient way to coordinate and integrate between organizational units. Organic structures featured more generalists, or people with multiple areas of expertise. Organic structures allowed almost everyone to contribute ideas on how the organization could be successful, from the top executives all the way down to the entry level staff members. There were fewer regulatory restrictions on staff, and employees could explore innovative ideas and concepts that could potentially benefit the company in the future. The freedom to share information with one another is openly encouraged, and the avenues of information sharing are left largely unrestricted. The corporate culture that developed from the organic structure encouraged employees to

have a greater sense of trust in one another (Swift & Hwang, 2013). By empowering employees in such a way, organic organizations seek to build loyalty among employees by making them feel like integral parts of the organization (Rhee et al., 2017). In their analysis of the Burns and Stalker continuum model, Hull and Hage (1982) asserted that the organic structure works best in smaller, high-tech organizations. Indeed, the ever-changing nature of the high-tech field lends itself well to organizations that have a high degree of flexibility, so organic organizational structures may be best suited to that environment.

On the other extreme end of the spectrum was the purely mechanistic organizational structure. According to Burns and Stalker (1961), the mechanistic structure was so named because organizations that employed such structures were designed to mimic machines in their operation. Instead of the generalists of the organic structure, mechanistic structures relied upon specialists who did their job efficiently and rarely stepped outside of their job descriptions to perform tasks. The decision-making process largely adhered to a hierarchical model: Those at the top made the important strategic decisions and passed those decisions to the managers beneath them, who were then charged with tactically implementing those decisions. Mechanistic organizations not only employed a concentrated decision-making model, but they also restricted knowledge sharing among employees with the use of formalization. Thanks to formalization, knowledge in mechanistic organizations is usually on a need-to-know basis; certain pieces of information are not widely available to everyone, and the knowledge that is widely available can be segmented by job function, so employees only learn what they

need to do their particular job, but nothing else beyond that. Formalization, as defined by Pertusa-Ortega et al. (2010), are the rules, norms, and protocols that organizations use to regulate employee behavior. Mechanistic organizations focus on speed and efficiency, and therefore wasting time on creative pursuits is usually frowned upon. The focus on role specialization, coupled with the discouragement of free knowledge sharing among employees, created the need for transactional leadership to incentivize completing tasks; this created competition among employees to meet productivity goals (Tyssen et al., 2014). Whereas teamwork is emphasized in organic organizations, individual contributions are more common in the mechanistic structure.

Perrow (1967) categorized organizations into a 2-by-2 matrix based on three dimensions: Its task structure, its social structure, and its goal system. Using Perrow's terminology, the organic organization would have a great deal of interdependence between workers, a focus on finding innovative yet risky ways to use the raw materials at hand, and a focus on long-term goal planning. The mechanistic organization, however, has a firm understanding of the materials it works with and uses them with great efficiency. The mechanistic organization prioritizes short-term goals and stability, implementing very few changes to their products or services. The goal-oriented structure often found in mechanistic organizations features an emphasis on incentive-driven short-term goal planning to keep workers continuously engaged and motivated. Perrow's matrix model highlights the dichotomy between the conservative model of the mechanistic organization and the aggressive organic model, but it also applies well to the

four business roles of IT as stated by McFarlan (1984), which will be discussed in more detail later in this chapter.

Lawrence and Lorsch (1967) introduced the concept of differentiation and integration when it comes to organizational structure, using the work of Burns and Stalker (1961) as a foundation for their study. According to the authors, differentiation is defined as how segmented the organization is; that is, how many subsystems are part of the overall system. Integration is defined as how effective the organization is in coordinating the activities of all its subsystems. Blau (1970) expanded on this idea in his paper by making several propositions about how organizations become more complex as they grow larger. Moreover, as organizations grow, the supervisory scope of managers also grows, which increases the overall workload of managers while also forcing the organization to work harder to achieve a high level of integration. Damanpour (1991, 1996) discussed both vertical and horizontal differentiation in his papers. He defined vertical differentiation as the number of hierarchical levels between the lowest-ranked member and the highest-ranked member of an organization, while horizontal differentiation referred to how specialized the jobs are within an organization. So, organizations with low levels of horizontal differentiation distributed tasks narrowly among a small group of people with generalized skills in several different areas, while organizations with high horizontal differentiation employed specialists with expert skills in a comparative handful of areas. For example, in smaller organizations, it is not uncommon to combine the project manager and business analyst roles into one position, with a single person performing both tasks. Larger organizations will not only employ

separate teams of project managers and business analysts, but those individuals may further specialize in certain software packages or working with clients in specific industries.

Considering that in contingency theory, organizations dynamically change in response to both internal and external stimuli in their environment, it is important to note what that environment looks like, and what the boundaries of that environment are. Duncan (1979) generally identified what the external and internal environment would look like and used decision tree analysis to decide what structure would be best, with the nature and goals of the environment considered the root of the tree. These results would indicate that the external environment that an organization is a part of is just as important as the internal structure when it comes to organizational design. Organizations in more static competitive environments do not have to deal with the high levels of uncertainty that come with more dynamic marketplaces, such as technology or e-commerce. Therefore, organizations in static environments may opt to structure themselves in a simpler fashion. Santos and Eisenhardt (2005) looked at the problem from a different point of view and asserted that there are four boundaries that organizations must work within and act as constraints on their business practices. The first is the efficiency boundary, which governs how much of an organization's transactions are done in-house rather than by an outside party. Outsourcing tasks may incur an additional cost, but if the organization is incapable of doing so on its own, it may be necessary. The second boundary is the boundary of power, which measures how much overall power an organization has in the marketplace. With a higher level of power comes a higher level of

influence in the market, and the less an organization must rely on others to effectively function. The third boundary is that of competence, which is a measure of how well an organization uses the resources at its disposal. The theoretical foundation of this boundary is the RBV. The fourth and final boundary is the boundary of identity, which measures how well an organization is faithful to its mission statement and stated goals; in other words, how well the organization understands what it is and what type of individual the decision makers want to be a part of the organization.

The Effect of Formalization and Protocol on Knowledge Management Systems

Knowledge is a resource that could be the most valuable to organizations if their corporate cultures consider it to be valuable. Depending on how the organization is set up, knowledge can be treated as a scarce commodity that is concentrated in the hands of a few people, or a knowledge management system designed to draw knowledge from all aspects of the organization to contribute to the body of knowledge (Martin-Rios, 2018). With respect to the contingency theory spectrum of mechanistic and organic organizations, fully mechanistic organizations restrict access to knowledge, while fully organic organizations encourage the free exchange of information. Research on the overall effect of organizational culture on knowledge sharing will be discussed later in the chapter; this section will focus on the research regarding knowledge management systems and the effect of formalization on their functionality.

A knowledge management system is a support system put in place to assist organizations in creating, acquiring, maintaining, and storing knowledge (Shrafat, 2018). Organizations with a culture that places a high value on knowledge will treat it as a

precious commodity, and not a mere means to an end (Azeem et al., 2021). Effective knowledge management systems can help organizations achieve a higher level of performance and establish a competitive advantage in the marketplace (Imran et al., 2021). Formalization plays a role in the functioning of a knowledge management system because organizational norms and protocols will restrict both how knowledge is acquired and how it is shared as well (Kanten et al., 2015). More mechanistic organizations will lean heavily on specialized experts to use their knowledge to solve problems, but not necessarily share that knowledge with others. More organic organizations may use collaboration and teamwork to complete tasks, encouraging employees to both learn from one another and support each other, covering for weaknesses in team members (Martin-Rios, 2018). Over time, members of an organization will prioritize knowledge as much or as little as the organization does, which is part of the shared identity that corporate culture norms create.

Imran et al. (2021) divided the knowledge management system into two parts, which is also how knowledge is usually categorized: Tacit and explicit. Knowledge stored by the firm in an accessible repository is considered explicit knowledge; however, a significant portion of that knowledge is acquired as tacit knowledge first. Tacit knowledge is knowledge acquired through personal experience, and as such depends on person-to-person knowledge sharing to disseminate (Imran et al., 2021). Rudramuniyaiah et al. (2020) conducted a study that found IT workers were more likely to share information when they felt a sense of altruism, the organization exhibited norms that were conducive to knowledge sharing, and specialization was present. These results

implied that members of an organization like to feel as if they are experts in their field, but they also are encouraged by their corporate culture to share their specialized knowledge with others.

A knowledge management system that effectively converts tacit knowledge to explicit knowledge is usually accompanied by a formalization plan that increases the flow of information from employee to the organization; in fact, Chion et al. (2020) found that there is a significant relationship between knowledge sharing and organizational culture. Research has shown that employees were more willing to share their knowledge with each other and with the organization when managers exhibit leadership styles that encouraged the activity (Matošková et al., 2018). Managers would not exhibit these behaviors if organizational regulations did not permit them to do so. As a corollary to manager behavior, organizational reward systems also increase the likelihood of knowledge sharing among employees (Salameh & Zamil, 2020). Once again, the reward systems are incentives that are implemented as part of management protocols and the formalization plan put in place by the decision makers within the organization. This is what Imran et al. (2021) referred to as the knowledge management environment.

Takhsha et al. (2020) discussed a phenomenon called organizational silence, that, when combined with ostracizing from the social group, greatly affects the individual desire to participate in knowledge sharing. Such an environment develops organically from the corporate culture. The interaction between employees is regulated via formalization. Alternatively, when the system of regulations regarding knowledge sharing within an organization helps create an environment encouraging the practice,

employees have a greater trust in one another and are more dedicated to their jobs (Liu et al., 2020). In this situation, tacit knowledge is shared more often, and that valuable knowledge eventually migrates to the organizational repository of explicit knowledge. In the end, a knowledge management system reflects its organization, and its overall robustness depends on the contributions made by its employees. If such contributions are not valued or even warranted, the system will not serve to assist the organization in remaining competitive.

Organizational Structure and its Effects on Organizational Performance

Organizational structure helps shape the corporate culture that regulates business practices and employee behavior through formalization and influences the entire management system (Tiller, 2012). The decision-making process was also affected by organizational structure, and according to Fredrickson (1986), the three main dimensions of organizational structure affected decision making in their own way. Because structure varies in organizations due to the structural practices detailed in contingency theory, each organization develops a structure and a culture that is unique to itself. The thought process behind this is to put the organization in the best position to succeed. Pertusa-Ortega et al. (2010) conducted a study on the effects of organizational structure on how well an organization performs in utilizing its knowledge resources, and they found that while complexity had a positive influence on knowledge performance, centralization had a negative influence. The authors stated that complexity's positive influence on knowledge performance may have come from the role of middle managers as facilitators

and agents of change. Centralization had a negative influence based on the autonomy that middle managers are not given in highly centralized firms.

Also notable is the relationship between the decision-making process and organizational performance. Miller (1987) noted that decision-making and organizational performance are so dependent on each other to function properly, that formalization had a direct effect on how proactive decision makers in small- and medium-sized firms were in acting decisively on behalf of the organization. These results would indicate that high levels of formalization, such as heavy regulations and protocols, may work to stifle and inhibit overall organizational performance. Pierce and Delbecq (1977) surmised from the results of their study that organic organizations, which usually feature lower levels of formalization, have the structure in place to initiate innovation easier than more mechanistic organizations. Cosh, Fu and Hughes (2012) concluded in their study that firms with decentralized decision-making models are better at developing innovative ideas than their counterparts with other organizational structures, with small high-tech firms being the most equipped to perform at high levels. Lee and Yang (2011) reached a similar conclusion, with organically structured firms featuring higher-performing performance management systems (PMSs).

Organically structured organizations appear to have a distinct advantage in the area of organizational performance. However, there is research that reached other conclusions. Claver-Cortes et al. (2012) found that organizational structure had no direct influence on performance, but it did have an indirect one through a moderating variable. Similarly, Zheng, Yang and McLean (2013) found that knowledge management was a

significant moderating variable between organizational culture and organizational effectiveness; the connection between organizational culture and knowledge management will be explored further later in the chapter. Pleshko and Nickerson (2008) found that neither competitive strategy nor organizational structure had an influence over performance, asserting that all structural forms are equally likely to achieve a successful outcome; this is consistent with the uniquely best structure concept from contingency theory. While each organizational structure has its strengths and weaknesses, if the structure fits the business goals of the key decision makers, it should have the same likelihood of success as any other structure. Kanten, Kanten, and Gurlek (2015) found that mechanistic organizations actually had a greater influence on job embeddedness, which is defined as the combination of situations that keep workers from quitting or changing jobs; however, they also found that organic organizations were much more effective as learning organizations. So, while workers in mechanistic structures appeared to leave their jobs at a lower rate, those in organic structures were in environments that were more conducive to organizational learning and knowledge transfer opportunities. The higher rate of autonomy in organically structured organizations may be a reason for the lower rate of embeddedness, as workers may be more inclined to change jobs or start their own business with the knowledge they have acquired. These results would also indicate that organizations with more organic structures are more flexible than others and are better positioned to compete in the marketplace. When looking at the organization as an inventory of valuable, finite resources, allocating those resources in the right positions

at the right times is part of organizational flexibility. That leads into a discussion on the RBV.

Resource-Based View of the Firm Background and Seminal Works

The resource-based view begins with the idea of what Barney (1986) called strategic factor markets. In these markets, there are two categories of firms: Strategizers and controllers. The strategizers are organizations that seek to acquire resources and use them in some way to achieve or maintain a competitive advantage, while the controllers are firms that either own or control the distribution of these resources (Barney, 1986). Controllers have the advantage over strategizers because of the VRI principle: The resources they control are valuable, rare, and inimitable (Barney, 1991; Alexy et al., 2017). If controllers have resources that are non-substitutable, it would be to their advantage so competitors cannot easily produce similar resources to undercut their market share. There is an interdependent relationship between the two: Controllers need strategizers to buy their resources so demand stays high, and strategizers need controllers to ensure they have a fresh supply of resources at their disposal. Wernerfelt (1984) went into detail about this relationship, in which the author viewed the firm as a collection of finite resources to be deployed in such a way that ensures firm survival and grows market share; this is the resource-based view of the firm. Controllers who have a monopoly over a certain resource could use their market leverage and the VRI principle on strategizers, effectively becoming a bottleneck in the innovative process. Alternatively, leaders in the strategizer markets could put up resource barriers to prevent rivals from competing, such as signing exclusive contracts with suppliers providing key resources. Ultimately, the

goal is to achieve what Barney (1991) called a sustained competitive advantage over others in the marketplace.

Peteraf (1993) elaborated on competitive advantage in her paper, presenting four key dimensions of what comprised competitive advantage. The first is heterogeneity, which states that two firms of varying resource levels should be able to compete in the same marketplace. However, the firm with more resources would have a distinct advantage. The second is ex post facto limits to competition, which refers to the ability of competitors to effectively imitate or substitute valuable resources. The third is ex ante limits to competition, which limits the ability of competitors to challenge market leaders for their position once they enter the marketplace. The fourth and final dimension is the imperfect mobility of resources, which makes certain resources less useful outside of a specific firm's utilization of them, but they can still be used by competitors in another capacity. Porter (1979) also developed a list of dimensions that shape competitive strategy, which he called his five forces: The threat of new competitors entering the marketplace, the collective bargaining power of both suppliers and customers, the threat of products and services that can serve as reasonable substitutes for a market leader's offerings, and the entire industry, putting both internal and external pressure on firms to compete. Barney (1991) also mentioned that to achieve strategic advantage, an organization must be structured to exploit the value of the valuable, rare, and inimitable resource for their own purposes. As a corollary to this point, it follows that for an organization to not only compete, but to achieve market leader status, it must have a combination of both valuable resources and in-demand products and services, along with

the collective ability to exploit their resources in ways that cannot be duplicated by others. Organizations that are not structured to maximize the value of their resources will squander them and not reach their full potential.

There is a difference of opinion on the resource-based view of the firm and its effectiveness as a management theory. One of the common criticisms of the theory, as stated by Kraaijenbrink et al. (2010) is that the resource-based view of the firm (RBV) tells managers to acquire valuable, rare, and inimitable resources without any specifications as to how to go about doing so. The managers of strategizer firms do not have this kind of control over resources, and the managers of controllers cannot effectively predict how valuable their resources will be in the future. However, as Barney (1991) argued, the RBV explains the strategic competitive advantage that some firms have over others by detailing some of the reasons why the advantage exists; it is not a roadmap for managers to follow for obtaining valuable resources. Another critique of the RBV is that it is only applicable to large firms who can apply pressure to competitors due to achieving strategic competitive advantage; Gibbert (2006) goes even further, asserting that the RBV cannot be generalizable. Gibbert pointed out that generalizability cannot be achieved because resource uniqueness makes it impossible. However, Kraaijenbrink et al. (2010) asserted that generalization and uniqueness are diametrically opposed to one another, and trying to generalize uniqueness makes no sense. Instead, the authors argued that the RBV is best applied to static industries since there are other circumstances that can explain a firm's competitive advantage in industries with more volatility. This line of thinking excludes the scenario where a smaller company develops a resource that their

larger competitors cannot duplicate or substitute; a resource that allows them to develop products and services that are unique and clearly differentiable in the marketplace. Such a scenario could be the catalyst for a smaller firm to achieve a competitive advantage and experience growth as a result. Smaller firms' willingness to take risks and invest in growing their knowledge base improves their performance, since these firms are better suited to respond to their customers in a timelier fashion than larger ones (Campbell & Park, 2016). Despite these and other criticisms, the resource-based view of the firm is a useful theory to assist in evaluating competitive advantage, how firms go about achieving it, and what competitors need to do to obtain it for themselves. Gancarczyk (2016) compared RBV favorably to transaction cost theory, which holds that growth is the favored option in an organization if the transaction cost of a decision would be less if implemented internally rather than completing those transactions externally. This means that firms would be in an advantageous position if they can cultivate valuable resources themselves rather than to be beholden to external vendors. For IT departments, maintaining alignment with the business side of the organization ensures it remains a valued resource and contributes to the firm's quest for competitive advantage.

The Business/IT Alignment

The IT department of an organization can only be as effective as the rest of the organization allows it to be. According to Gupta et al. (2018), competitive advantage for information systems can be obtained and sustained by maintaining the business/IT alignment, coordinate efforts and strategy with other firm resources, and make innovation a regular occurrence. So, the alignment between the business and information technology

(IT) dictates how much of a priority IT will be within the overall structure of the organization, as well as the role it will play in the day-to-day business practices. The alignment affects how these departments are funded, their technological capabilities, and the overall knowledge level of personnel. It is important to keep in mind that technological capability is also a resource that can contribute to a firm's competitive advantage. Even if it is not always rare or inimitable, technological capability can be a valuable resource that separates market leaders from their competitors. Fink and Sukenik (2011) found in their study that the relative value that an organization puts on its information technology department had a distinct influence on its overall information technology capabilities; this relative value is a corollary to the culture that the organization creates and how important information technology is considered within the organization.

The business/IT strategic alignment is defined by Jorfi, Nor, and Najjar (2011) as the extent in which the goals, strategies and objectives of the IT department are supported by the goals, strategies, and objectives of the organization. Much of this is dependent on the business role that IT plays within the organization. McFarlan's (1984) seminal paper on the business roles of IT detailed the four general roles that IT can play within an organization. The support role is a passive role where the organization puts IT at the lowest possible priority. The IT department is given just enough resources to function because its operation is not seen as crucial to the overall health of the business. Such a business role may be common in small businesses or businesses in industries that are relatively static in terms of innovation. The factory role is also a support role, but it is far

more active and integral to the day-to-day operation of the organization. The IT department with a factory business role may monitor logistics and coordinate information with multiple branches. An IT department with a factory role is the backbone that helps the organization run, and it performs a handful of duties extremely well and with great efficiency. The turnaround role is for organizations in times of turbulence or change; the organizations may be experiencing growth or discontinuous change like a merger. IT departments with turnaround roles must be extraordinarily flexible to be compatible with organizations undergoing a significant transition. The strategic role for the IT department is one of true partnership: The business side and the IT side work together on achieving business goals and move the business forward. Information technology departments with a strategic role are given the resources they need to excel, and the managers of these departments actively strive to acquire the human resource talent required to implement the bold strategies set forth by the organization's top decision makers. Carcary, Doherty, & Thornley (2015) developed a framework to manage overall IT capabilities, including managing the IT department like its own separate business. Managers of an IT department with a strategic role would benefit from utilizing their strategy, since it focuses on managing all aspects of the department in accordance with business needs.

The business role assigned to an information technology department represents how important it is to the business side, and how much of a priority it is when it comes to resource allocation and budgeting (McFarlan, 1984; Carcary et al., 2015). In that sense, the information technology department can be viewed through the lens of the resource based view of the firm, since IT is a collection of technological, architectural, financial,

and human resources. According to Jorfi et al. (2011), information technology capability is based on four components: Architecture, infrastructure, human resources, and relationship resources. When IT and business are aligned, all efforts are focused on assisting the organization to obtain a strategic competitive advantage (Jorfi et al., 2011). Mao et al. (2016) found in their study that resource commitment acted as a moderating variable between IT resource capability and competitive advantage. As a corollary, it follows from these results that resource commitment is contingent on business role; that is, the allocation of resources from the business depends on how IT fits within the overall organizational structure. These resources are not just tangible ones; intangible resources such as knowledge can also help achieve a competitive advantage, as shown in Ashrafi and Mueller's (2015) study. According to Heroux and Fortin (2018), the overall IT knowledge of management had a significant effect on innovation within an organization, and this relationship is made stronger when the business/IT alignment is factored in.

From the research, it could be stated that the business/IT alignment is not one-dimensional; in fact, it is a multidimensional alignment with several different moving parts. Reynolds and Yetton (2015) argued in their study on the business/IT alignment in multi-business organizations that there are three types of business/IT alignment. The first is functional, which addresses the strategic approaches of both the business and IT, making sure they are sync. The second is structural; the organizational structures of both the business and IT need to be compatible. This alignment dimension recalls contingency theory, since the overall structure of the organization will affect how the individual departments are structured as well. The third alignment is temporal or dynamic; as the

needs, goals, and resources sought by the organization change over time, the needs, goals, and resources given to the IT department should change along with it. An IT department with a turnaround role, as stated by McFarlan (1984), would probably pay closer attention to this type of alignment than others. Similarly, Tarafdar and Qrunfleh (2009) separated the business/IT alignment into two levels: Strategic and tactical. Strategic alignment is achieved when IT managers and the key decision makers on the business side agree on stated objectives and course of action to be taken. Tactical alignment is achieved when the IT side and the business side coordinate with each other in the deployment of resources to achieve business goals. The impact of organizational structure on the business/IT alignment can also be observed in the study conducted by Kim, Paik, and Lee (2014), where they found that those who worked at these organizations thought lower levels of formalization (referred to by the authors as “red tape”) was a better system for IT productivity than structures with higher levels of formalization. Formalization restricts how IT, as well as other departments within the organization, function, and that could interfere with an organization’s ability to respond to changes in the marketplace and maintain competitive advantage.

Flexibility and Ambidexterity

Ambidexterity in organizations was defined by Chang and Hughes (2012) as being able to support both explorative and exploitative innovation simultaneously. O’Reilly and Tushman (2012) defined it similarly as pursuing incremental and discontinuous innovation at the same time. Explorative innovation is discontinuous, seeking new products and services to develop for the purpose of achieving competitive

advantage. Exploitative innovation is incremental, seeking to improve or update existing products and services to make them more efficient, or to manufacture them at a lower cost. Explorative innovation requires more resources than exploitative innovation; but ambidextrous organizations put a similar amount of investment into both, so they are improving what they already offer while also putting resources into research and development toward what is coming next. The two types of innovation seem to be contradictory to one another, but how organizations manage them affect their strategic advantage or disadvantage, and as a result, also affect their overall performance.

Flexibility was defined by Ramendran et al. (2013) as an organization's ability to react to internal or external stimuli. Santos-Vijande et al. (2012) defined flexibility as the ability of an organization to respond and adapt to changes in the marketplace, such as new threats in the form of competitors or opportunities in terms of underserved segments of the market. So, flexibility refers to how dynamic an organization is when changes occur; the changes can be either predictable or unpredictable, or as a response to a competitor's actions (Brozovic, 2018). Recall that in contingency theory, organizations structure themselves primarily for strategic advantage and optimum performance in the marketplace, so flexible organizations are built to withstand and adapt to changes better than less flexible ones. Bock et al. (2012) showed in their study that a creatively oriented organizational structure affected strategic flexibility positively, so structure can influence how flexible an organization can be. Flexibility and ambidexterity are related in the following fashion: Flexible organizations recognize the importance of exploiting existing products and services to generate revenue and solidify market share, but also devote

resources to exploratory endeavors to meet the changing needs, wants, and tastes of their customers. Thus, a flexible organization is also an ambidextrous one.

Ambidexterity and flexibility also have an impact on the business/IT alignment. Helbin and Van Looy (2019) mentioned in their literature review that there are three competing approaches on how ambidexterity can be reached with respect to the business/IT alignment, and all three should be components of a complete evaluation of how ambidextrous an organization is. The first is structural ambidexterity, which forms the framework for coordination and integration throughout the entire organization. The second is contextual ambidexterity, which uses organizational knowledge and understanding of how to translate strategic plans into tactical resource allocation. The third is leadership ambidexterity, which can be achieved when the top decision makers on both the business and IT sides are in strategic agreement with respect to how to proceed. Using this three-category format, Chandrasekaran et al. (2012) claimed in their study that there are three levels to business/IT alignment: The higher strategic level, the lower tactical level, and the contextual alignment level in between. The contextual alignment middle level linked the low and high levels together by bringing a sense of understanding to what needed to be done (strategic), as well as how it needed to be done (tactical). In their study of high-tech firms, the authors found that the higher two levels affected ambidexterity, while the lower tactical level did not have the same impact to ambidexterity. Ambidexterity is also something to be achieved in smaller firms as well, as Schreuders and Legesse (2012) noted in their paper. They argued that small technology firms can achieve ambidexterity by utilizing an ambidextrous leadership

style, hire employees and managers with the ability to explore and exploit, reallocate resources evenly across projects regardless of their function, or save costs by outsourcing either the exploitation or exploration function to an outside firm.

In terms of flexibility, Kumar and Stylianou (2014) detailed nine different types of flexibility in information systems in their qualitative study, spread across three separate categories. Development flexibility had the most occurrences, with new technology development and integration coming in second and third, respectively. The results of this study indicated how important it is to allocate resources to coordinate, develop, and maintain systems; IT departments in flexible organizations are more likely to be given these resources, and as a result, they contribute to organizational performance in a positive fashion. Broekaert et al. (2016) investigated flexibility in family-owned firms and found that family firms tended to spend less on developing new products but remained flexible due to their ability to willingness to reorganize dynamically. Family firms have an implicit level of trust among the key decision makers due to familial ties, and this seemed to help when it came to organizational flexibility. On the other hand, the tendency to spend less on research and development indicated that family firms can be set in their own way of doing things and not willing to innovate as often. As a result, it could be implied that family firms do not innovate as often, they make an impact when they do. The organizational culture of family firms is built around being a family, and it even extends to employees who are not actual family members. The culture of an organization is an outgrowth of its structure, and in the next section, literature on the impact of organizational culture on innovation and knowledge sharing will be presented.

Organizational Culture

Organizational Culture Overview

Once the foundation of an organization is put into place via its internal structure setup, it is the culture that grows within it that brings it to life and gives it meaning. The culture of an organization is initially shaped by its culture, and subsequently by the people who work there. While organizations are systems of various sizes and of various levels of complexity, the view that organizations can be improved through cultural changes come from the idea that they are living things of their own (Fortado & Fadil, 2012). Considering the number of interdependent, functional parts in an extraordinarily complex organization, the comparison to a living organism appears to be apt. As norms develop, protocols emerge, and both written and unwritten rules form, the members of an organization settle into a familiar behavior pattern (Zheng et al., 2013). The culture shapes how both explicit and tacit knowledge is shared, and this knowledge is crucial toward developing innovative products and services to achieve or maintain competitive advantage (Alrawi et al., 2011). Contingency theory and organizational structure are the inspiration behind culture creation, and the managers that work within the structure and culture must deploy resources according to accepted organizational norms and protocols to give the organization the best chance to succeed (Fink & Sukenik, 2011). Thus, organizational culture plays a vital role in the success or failure of an organization (Büschgens et al., 2013).

Consider the four faces of organizational culture, as stated by Fortado and Fadil (2012). There is the human relations face, which is the informal social network of

employees within an organization. This is where tacit knowledge is shared among employees, as they communicate experiences with one another. The software of the mind is the face of an organization's explicit body of knowledge. This body of knowledge is the one that is shared, managed, and stored by the organization, and serves as the official organizational handbook. This system is called *software of the mind* because it is a system that is the collective product of every mind within the organization that has contributed to it. The software of the mind is where the tacit knowledge shared among employees can be formally codified and converted into explicit knowledge. The process consultation face is one of progress: The existing processes and protocols are first evaluated and analyzed. Then, employees are asked what needs to be changed. Then, the affected processes and/or protocols are changed to suit the needs of the employees. This change can be a minor one or a change that calls for discontinuity. The appreciative inquiry face is an alternative method of making changes. In appreciative inquiry, managers ask employees about their personal positives about the organization and what other positive changes they would make if given the chance. To better illustrate the contrast, process consultation asks what does not work and could be done differently, while appreciative inquiry asks what already works and could be done better. The difference between the two means managers can use them in tandem to make internal changes and put the organization in a better position to respond to changes in the marketplace (Fortado & Fadil, 2012; Alrawi et al., 2011).

Kalyar and Rafi (2013) discussed a concept called the organizational learning culture. These are organizations that emphasized knowledge sharing, innovative ideas,

and entrepreneurial pursuits from their employees from all levels of the organization. Managers act as facilitators between employees and encourage the free flow of knowledge between members of the organization. On their end, the employees are empowered to be innovative in their work and contribute ideas they are passionate about. The result is a culture that puts collaboration, forward thinking, and the sharing of tacit knowledge at the center of day to day life within the organization. In the results of their study, Auernhammer and Hall (2014) found that employees in organizations with cultures that valued openness and a shared sense of values had a significant impact on the overall innovation performance of the organization. When employees feel as if they are a part of the decision-making process and find intrinsic value in their day-to-day work, they feel more motivated to perform and are more willing to share what they have learned with others. The next two sections of the literature review will cover literature that addresses the impact of organizational culture on both innovation and knowledge sharing.

Organizational Culture and Innovation

Organizational culture affects how innovative ideas are gathered, managed, and ultimately implemented (Martins & Terblanche, 2003). Recall the previous discussion on organizational flexibility, and the balance between exploration and exploitation that organizations must navigate in order to achieve a competitive advantage. When discussing innovation strategy in particular, this balance takes on a new terminology: Imitation and innovation. Imitation is similar to the exploitation strategy: Incremental improvements made primarily for cost-cutting and to increase sales at a cheaper price point. Imitators, as the name suggests, mimic the products and services of competitors,

but seek to make them cheaper, sell them cheaper, or both. The innovation strategy is analogous to exploration; the organization seeks new ideas for products and services to serve their customers in different ways than it did previously. While there could be a higher cost incurred due to the innovative pursuit, the goal is to develop a product or service that others do not already offer, and differentiate from the competition in that way. In the second of two studies, Naranjo-Valencia et al. (2011) discussed the impact of organizational culture on innovation strategy using the imitation-innovation dichotomy, while in their first study (2010), the authors explored the correlation between organizational culture and the type of product innovation strategy an organization chooses. The authors found that organizational culture indeed does play a very significant role in innovation strategy, and that organizations with cultures that valued employee contributions and knowledge sharing were better positioned to develop new products and services, while cultures with a more rigid hierarchical structure were less likely to have a product development strategy based on innovation rather than imitation. Wu and Lin (2011) came to a similar conclusion in their study of 1000 Taiwanese firms, noting that innovation strategy was positively affected both the quality of innovations that the organization produced and the overall innovation performance of the firm.

To increase the likelihood of employees seeking innovative pursuits at work, the work environment needs a few essential attributes; the importance of organizational culture becomes apparent in situations like these. Luekitinan (2014) stated that to increase employee innovative pursuits, it is advantageous to have managers who encourage their subordinates to be creative at work. Employees must also be given the

autonomy to be innovative; mere encouragement is not enough if the freedom to act on that encouragement is not present. The organization also requires the resources necessary for employees to bring their innovative ideas to fruition. A constant state of flux is not good for the health of an organization, and is not a good source for idea generation. Dul and Ceylan (2014) found in their study that organizational cultures that encouraged employee creativity were more productive when it came to developing new products. Wu and Lin (2011) define organizational commitment as the desire of the organization's members to commit to achieving the goals set forth by the decision makers. The results of these studies indicated that if the organization develops an environment and structure conducive for innovation, the organizational commitment from the rank and file will use their creative ideas to help the organization achieve its state goals and gain a competitive advantage in the marketplace.

While organizations with high levels of flexibility may have an advantage when it comes to innovation, it does not mean that organizations that value formalization and planning are necessarily incapable of being innovative themselves (Camison & Villar-Lopez, 2014; Turulja & Bajgoric, 2016). Organizational structures must be designed with the attributes necessary that support both the long-term and short-term goals of the organization. Song and Chen (2014) put these attributes into two broad categories: Control-oriented and flexibility-oriented. The authors stated that these attributes serve as both constraints (control) and enabling (flexibility); in that sense, they are similar to the organizational boundaries discussed earlier. Song and Chen found that both types of attributes contribute to the effectiveness of innovative organizations, which shows that

innovation can come from organizations with some measure of control to their processes. Verdu et al. (2012) found in their study that environmental uncertainty affects the decisions that organizations make with regards to innovation. Decision makers who employed real options reasoning, or the ability to choose when to make a decision, influenced technological innovation, with environmental uncertainty acting as a moderating variable. The results the study by Verdu et al. (2012) indicated that environmental uncertainty enhanced this decision-making process, implying that decision makers who take the changing environment into consideration before making a decision would be much better off.

Organizational culture does not just affect product innovation and business strategy; it also has an influence on the organization's willingness to change its own organizational structure and adopt innovation strategies that may be competitively beneficial. Camison and Villar-Lopez (2014) conducted a study on Spanish firms that supported their hypothesis that managerial innovations had a positive influence on the research and development of new innovations. These managerial innovations could range from a small change in management techniques to something more drastic, such as hiring new management staff or a restructuring of the entire organizational hierarchy. Innovation adoption is also affected by organizational culture. Basole et al. (2013) conducted a study on what determined the level of information technology innovation adoption in organizations, and found that two of the main determinants of IT innovation adoption were trust and managerial support. Unsworth et al. (2012) found in their study that organizations that were the most open to innovation adoption had a corporate culture

built around aggressive risk-taking; these results indicated that highly organic organizations, with their focus on idea gathering and creative pursuits, would be at an advantage when it comes to innovation. However, as stated earlier, there is some benefit in being more conservative creatively. Jahanmir and Cavadas (2018) discovered in their study that the one distinction that separated an early adopter of technology from a late adopter is negative word of mouth; in fact, it made late adopters twice as likely to remain late adopters as opposed to other factors, such as reputation of the vendor or the organization's own attitude toward a certain type of technology. While the highly flexible, risk-taking organizations may be more willing to be early adopters of new technology, other organizations with a more controlled strategy may wait and see how the technology works out for those early adopters and get their opinions before investing further. In that sense, the late adopters use the early adopters as unpaid beta testers. The late adopters may not use a new technology in its first version, but they may consider doing so by the second or third iteration once the major concerns of the early adopters are addressed.

Organizational engagement and resource commitment are two important elements to organizational culture and knowledge sharing (Barrick et al., 2015; Mao et al., 2016), and in many ways, they are complementary to one another. An engaged employee base will be more likely to contribute creative ideas that may lead to new products and services. Conversely, for those ideas to come to fruition, an organization must also have the desire to create a corporate culture that values individual contributions and encourages them, and that also means committing the resources necessary to make that

happen. As a result, other members of the organization will benefit from the environment and be more willing to contribute ideas and share their knowledge with others. There is also a sense that anyone on the hierarchical chart can contribute to the ultimate goals of the organization. The next section includes a discussion of organizational culture's role in shaping the acquisition and management of knowledge.

Organizational Culture and Knowledge Management

Knowledge management is defined as the acquisition, maintenance, storage, manipulation, and implementation of knowledge within an organization (Chang & Lin, 2015). According to Chen et al. (2010), it consists of two major components: Knowledge creation and knowledge sharing. As stated in the previous section, organizational culture can have a noticeable effect on knowledge sharing within the organization. Organizations with cultures that are more open and less hierarchical may encourage employees to share knowledge openly with one another and with management. In fact, Mahmoudsalehi et al. (2012) found this to be the case, as less centralized and formalized organizations had a positive correlation with knowledge management. Liao et al. (2011) showed similar results in their study, stating that employees at lower levels of the organization feel empowered by a decentralized decision-making structure, as it encourages them to participate more. Another study by Steiger et al. (2014) showed that organizational structure had an influence on knowledge transfer and knowledge culture. This is the organizational learning culture that Kalyar and Rafi (2013) discussed, which is a culture that maintains an ever-growing body of explicit knowledge and encourages the exchange of tacit knowledge among members. This transfer of tacit knowledge acts to support the

body of explicit knowledge that already exists within the organization, and over time it becomes explicit knowledge of its own.

Aldulaimi (2015) found that knowledge management acted as a mediating variable between organizational culture and effectiveness, concluding that knowledge management affects how impactful culture can be on the overall effectiveness of an organization. The results of Aldulaimi's (2015) study imply that there is some sort of correlation between knowledge management and organizational culture; perhaps it is the rules, norms, and protocols surrounding the acquisition and management of knowledge that affect overall performance. Martinez-Leon and Martinez-Garcia (2011) found that organizational structure had an influence on organizational learning. The authors found that the attributes of structure that affected learning the most were centralization and socialization, which lends support to how important centralization is to employee openness and willingness to share the knowledge they have acquired.

The impact of socialization on knowledge and organizational learning was also a factor in a study done by Swift and Hwang (2013). They found that employees who had high levels of trust in their co-workers and the organization they worked for were more willing to engage in knowledge sharing, which contributed to the learning process throughout the organization. Socialization is a result of the corporate culture and the system put in place by the decision makers to create an environment conducive for knowledge sharing. Organizations with tighter controls on knowledge sharing may filter such sharing only through certain channels, or outright discourage the practice altogether, potentially creating information silos, redundancy, and inefficiency. Almeida and Soares

(2014) conducted a qualitative case study on a Portuguese firm to investigate why project-based firms suffer from poor communication and knowledge transfer. Due to the project-oriented nature of these firms, project team members acquire tacit knowledge specific to the project, but that knowledge is not easily shared from team to team. The authors concluded that implementing an information management system that serves as a common repository for such information could guard against the development of information silos within the organization. Such a system could also be a feasible solution in more mechanistic organizations with specialized work units.

There has been considerable discussion so far on organizational culture, and how it is shaped by the structure of the organization. The other components to organizational culture are the managers, who act as the leaders of the organization and function as the corporate face to their subordinates. Their role in shaping organizational culture is also important, and the next section briefly discusses literature that shows how they impact knowledge sharing within an organization.

Leadership and Change Agents

Organizational leaders are the ones who set the course for the firm and create the vision that guides the organization on a day-to-day basis. When the time inevitably comes to change certain aspects of the culture, organizational leaders must identify what needs to be changed, when the changes will go into effect, where the changes will be implemented, why the changes are necessary, and who benefits the most from the implementation of the changes (Farrell, 2018). Once these questions are answered and the change implementation begins, middle managers make the tactical decisions necessary to

successfully implement the strategy devised by their superiors. These managers take on the additional role of change agent for the duration of the transition. The role of a change agent, as defined by Westover (2010), is to “develop a climate for planned change by overcoming resistances and rallying forces for positive growth (p. 46).” In times of discontinuous change, such as rapid organizational growth or a restructuring of the organizational hierarchy, employees look to their managers and supervisors for information and guidance. These circumstances call upon the manager to become an agent of change. The corporate culture of an organization will make this already challenging job somewhat easier or considerably more difficult, and it begins with communication, which is something that appears rather simple on the surface.

As seen earlier when it pertained to knowledge management, communication is also an essential part of leadership; both from the top decision makers to the middle managers as well as the middle managers to the rank and file below them. Herzig and Jimmieson (2005) conducted a study that found middle managers could not effectively act as facilitators and agents of change due to breakdowns in internal communication. Senior managers and key decision makers at the top either did not clearly articulate what needed to be done to support the change implementation or did not support their middle management staff in their job as change agents. The lack of support can potentially undermine the change implementation effort and increase skepticism in employees. Van den Heuvel et al. (2015) conducted a study that investigated the communication breakdown from the employee point of view, and found that when management did not clearly identify why the changes needed to be made and what the impact of the changes

will be on the day-to-day job duties of the employees, employee trust in the organization decreased. This lack of trust increased skepticism as well as resistance to change; managers must build coalitions of willing participants to avoid communication breakdowns and implementation failure. Simoes and Esposito (2014) concluded in the findings of their case study that open dialogue between management and staff about upcoming changes reduces overall resistance, reinforcing how important communication is in the change management process.

The focus so far has been the role of the manager during times of drastic change; the manager also has a role during the calm, ordinary, day-to-day functions of the organization. The culture that an organization cultivates also affects who rises to positions of leadership, because the culture reflects what the decision makers value. Management innovation is defined by Vaccaro et al. (2012) as how managers plan the overall direction of the firm, make strategic decisions, and motivate people. Top decision makers emphasize certain leadership skills, and management innovations, when they do occur, are those that are in line with the long-term goals of the organization. This usually results in certain leadership styles and techniques in managers becoming dominant as compared to others. Consider participative leadership, which is defined by Huang et al. (2011) as how often managers include others in the decision-making process. A high level of participative leadership is a key cultural attribute in very organic organizations, with their emphasis on inclusionary decision making. When participative leadership is sanctioned by the corporate culture, the authors found in their study that it acts as a moderating variable between organizational structure and organizational learning. The

results of this study indicated that organizational culture, via its effect on participation in decision making, has an influence on organizational learning. This follows from other research (Bock et al., 2012; Chen et al., 2010; Rhee et al., 2017) that indicated cultures with organic structures and more open corporate cultures create environments that facilitate the free exchange of ideas; this contributes to both organizational learning and tacit knowledge between employees. Servant leadership is often practiced in these types of organizations since it places a priority on assisting others in performing at their best (Neubert et al., 2016).

Transactional and transformational leadership are two common types of leadership styles. Transformational leadership is engaging and encouraging, while transactional leadership emphasizes competition and goal setting (Tyssen et al., 2014). Each have their strengths and weaknesses, and there are elements of both that many organizations use to integrate into their corporate cultures and management systems. Tyssen et al. (2014) found that transformational leadership worked best in both permanent and temporary organizations during times of change. The authors further concluded that temporary organizations, such as the project-based firms from the previous section, would benefit more from transformational than transactional leadership. Their reasoning behind this was that temporary organizations tend to lack a hierarchy and only have a project manager guiding the team, putting everyone else on equal footing. Van der Voet (2014) found that the effectiveness of transformational leadership was stunted in bureaucratic organizations due to how they are structured. These results imply that transactional leadership is more effective in mechanistic structures, with corporate

cultures typically based on protocols, meeting benchmarks and cutting costs. Chadwick and Raver (2015) showed that goal-setting is not just for mechanistic structures; in fact, transactional leaders who set goals that promote knowledge sharing and organizational learning can mimic transformational leadership techniques in terms of the results obtained, which is tacit knowledge sharing and an increase in explicit organizational knowledge.

There are two types of leadership that focus primarily on knowledge sharing in a way that more common forms of leadership touch on in general, but not specifically: Ambidextrous leadership and knowledge-oriented leadership. Ambidextrous leadership, which Jia et al. (2021) define as a leadership style that balances the error-prone nature of explorative innovative thinking and the incremental, focused exploitative innovative thinking. Ambidextrous leadership is similar to ambidextrous organizations in that regard. This is different from situational leadership in that the focus is squarely on innovative pursuits and not the day-to-day work. Knowledge sharing is more important, and maximizing the technological and intellectual capabilities of the staff are advantageous for the organization to utilize in the competitive marketplace (Huie et al., 2020). Knowledge-oriented leaders provide incentives to employees to share knowledge, but it is not entirely transactional. Knowledge-oriented leadership is defined by Matoskova et al. (2018) as the leader playing the role of knowledge facilitator. It could be argued that ambidextrous leaders would be ideal working in ambidextrous organizations, and the study conducted by Matoskova et al. (2018) that found managers who employed knowledge-oriented leadership contributed to an increased level of knowledge sharing

among employees, seems to support that argument. A study by Takhsha et al. (2020) found that employees who felt left out or ostracized by the rest of the group were more likely to remain silent at work and less likely to participate in knowledge sharing, and a study by Shateri and Hayat (2020) found that an increased level of trust led to a higher willingness to share knowledge with others. The implications from the Takhsha et al. (2020) and Shateri & Hayat (2020) studies make it clear that not only do leaders have roles as change agents, but they also must facilitate and encourage the free exchange of knowledge amongst those they supervise.

In the final part of this literature review, the focus shifts to literature regarding the dependent and independent variables of the proposed study: First, a discussion on the effects of organizational culture on flexibility in information technology departments; then, a look at the potential effects of culture on flexibility in SMEs. The section wraps up by looking at literature and recent research on the correlational relationship between organizational flexibility and the independent variables included in this study.

The Effect of Organizational Culture on Flexibility in IT Departments

Information technology departments within organizations are typically service-dominant oriented; that is, they offer a suite of services for their customers and tailor specific solutions to meet their customers' needs (Liu et al., 2020). In their study of Hong Kong technology firms, Liu et al. (2020) found that service-dominant organizations engaged in higher rates of knowledge sharing, and that relationship learning acted as a mediating variable. Service-dominant organizations must engage in relationship learning as a type of knowledge acquisition, since relationship learning is how these organizations

learn what their customers want. In turn, this knowledge is stored for later use for innovation purposes, which ultimately contributes to the organization's competitive advantage.

Marshall, Curry and Reitsma (2011) found that the norms and protocols within IT departments had both a direct and indirect influence on the overall success of the department. Within the overall corporate culture, each department develops its own subculture within the greater organizational culture, using company-wide norms as a foundation. So, if adoption of norms within IT departments affect output, quality, and overall success, it follows that the company-wide culture also influences these attributes. A study by Ismail and Mamat (2012) showed information technology adoption positively influenced both process innovation and overall IT performance; therefore, organizations with both the ambition and resources to invest in technology stand to benefit via an improvement in business processes and performance.

Firms with high levels of IT flexibility can incorporate knowledge from both internal and external sources, adjusting strategies dynamically. Firms with low levels of IT flexibility suffer from lack of support from the business side of the organization, such as lack of resources (Cui et al., 2015). In their study, Cui et al. (2015) also discussed the concept of open innovation, which is a type of innovation strategy that invites outside firms to assist the parent firm in developing, manufacturing, and monetizing a product or service. They found that innovation radicalness, or how cutting-edge the finished product becomes, improves overall performance; however, this radicalness is only possible due to the flexibility of the IT department. This brings the discussion back to organizational

flexibility because the IT department is only as flexible as the business side of the organization allows it to be.

Gu et al. (2014) examined the relationship between organizational culture, environmental pressure, and IT project performance. They used four dimensions to represent organizational culture:

1. Institutional collectivism.
2. Results orientation.
3. A positive work environment.
4. Risk leadership tolerance.

The authors found that environmental pressures acted as a moderating variable between organizational culture and IT project performance, which indicated that while culture had an influence on project performance, events from both within and outside the organization acted as a catalyst to either magnify or mollify the impact. These results imply that a flexible organization that is positioned to be agile may react to the changing events better than other firms.

Heroux and Fortin (2018) found that the business/IT alignment acted as a moderating variable between IT governance, IT competence, and innovation. The results of this study support the discussion on the business/IT alignment earlier in the chapter; one of the limitations on the performance of IT is its business role as assigned by the firm. The authors used the resourced based view of the firm as the theoretical framework for their study, and their results imply that how well the IT department uses the knowledge it has acquired to assist the business in achieving its stated goals is affected by

the department's relative importance to the business side of the organization. This alignment, in turn, affects how innovative the department can truly be when developing new innovations to assist the firm in growing market share and obtaining a competitive advantage. Organizational culture, and the structure that it is founded upon, play a major role in shaping the business/IT alignment. Recalling the discussion earlier on ambidexterity makes sense in context here, since an organization with ambitious business goals requires an IT side that can use the resources given to support existing products while simultaneously developing new innovations.

The importance of IT flexibility can be seen in the literature review conducted by Helbin and Van Looy (2019). They looked at two different types of organizational ambidexterity: Contextual and structural. Structural ambidexterity is the more traditional of the two, consisting of dividing the explorative and exploitative functions among different departments within the organization. Contextual ambidexterity puts the explorative and exploitative functions within the same organizational unit, relying on organizational knowledge and employee capability to separate the two. The authors found that 39 percent of the studies they looked at referred to contextual ambidexterity alone, another 21 percent referred to structural ambidexterity alone, and another 19 percent referred to both; the remaining studies referred to neither. These results appear to indicate that contextual ambidexterity is a more popular approach for researchers to discuss, appearing almost twice as often as structural. Organizations, and the information technology departments within them, must cope with the fact that instability is becoming more of a norm across all industries, and those who are flexible enough to adapt to those

changes and ambidextrous enough to continue to innovate will fare the best (Gupta et al., 2018). SMEs may have an advantage in that regard, but organizational structure can still impact their performance as much as larger firms.

The Effect of Organizational Culture on Flexibility in Small- and Medium-Sized Enterprises

Due to the smaller size of small- and medium-sized enterprises (SMEs), they have the potential to be more flexible and ambidextrous; however, the impact on information technology may be far more pronounced in organizations of this size as compared to larger firms. This is evident in Broekaert et al. (2016), who found that small, family owned firms took advantage of their organizational flexibility to develop new products and services, even though they spent less on research and development (R&D) than firms who were not family owned. These results appear to indicate that the familial aspect of ownership comes with a sense of familiarity with one another, as well as an understanding of what customers want. This extends to small firms who wish to venture out into international markets. Ahi et al. (2017) found in their case study of six small- and medium-sized enterprises in Finland and Italy that the company that took a methodical, rational approach to decision making fared better in international markets. In this study, the company started off slowly, using a third-party vendor for distribution and collecting business intelligence about the new market. Once they had enough information to decide and assessed the possible outcomes, they moved forward with a full entry into the market. They took the time to understand what the potential customers in the new market wanted and tailored their approach to be successful. Family firms have been shown in research

(Calabro et al., 2018) to prefer the incremental approach to innovation, but this approach does have benefits. Family firms have also been shown to engage in mutual knowledge sharing with other like-minded firms based on mutual trust built over time (Bouncken et al., 2020). The research appears to indicate that small, family-run firms do innovate, but it is largely on their own terms and not necessarily dictated by market forces.

Schreuders and Legesse (2012) incorporated the concept of outsourcing either exploration or exploitation in their list of five ideas that small firms can implement to be ambidextrous and competitive. Included in this list are two items to elaborate on here: Adopting a leadership style that is more ambidextrous and employing people at the executive level capable of leading, managing, and being entrepreneurs. The organizational culture is influenced by these leaders, and their use of strategic entrepreneurship maintains the exploitative/explorative balance usually found in ambidextrous organizations (Bettinelli et al., 2017). Having ambidextrous-minded leaders is considered one of the key drivers of innovation in small firms (Chang & Hughes, 2012). Knowing when to innovate is almost as important as knowing how, since organizations must choose the right time to bring new products to the market. Releasing a product that the customer base is entirely unfamiliar with, or a product that shares space in a saturated market with similar competing products, puts a small business at risk of failure (Zaridis & Mousiolis, 2014).

Raymond et al. (2017) used both contingency theory and the resource-based view of the firm as the theoretical framework of their study on the information technology capabilities for product innovation in small- and medium-sized firms. Their study, which

surveyed 588 Canadian small- and medium sized firms, found that the firms generally fell into three categories when it came to IT capability configurations. The first was a more defensive position, focused on prudent, incremental changes. The second was deemed an analyst position, acting faster than a defensive configuration but still doing due diligence before investing in innovations. The final category were the prospectors, who actively tried to innovate and used their full capabilities to do so. The results of Raymond et al. (2017) indicated that small firms with organizational structures and cultures designed to be flexible and ambidextrous stand a greater chance for success, but that success was not guaranteed.

The use of knowledge management systems in SMEs can be beneficial; Shrafat (2018) found that knowledge management and organizational learning capabilities directly influenced the adoption of knowledge management systems in SMEs. Knowledge management systems combine with employee tacit knowledge to create intellectual capital, which can be used to achieve a strategic competitive advantage, even for smaller firms (Demartini & Beretta, 2020). Utilizing a knowledge management system can also assist an organization with retaining valuable tacit knowledge when employees leave or retire from the company by turning that tacit knowledge into explicit knowledge for current and future employees to access and learn from (Oliviera et al., 2020). It has also been shown that small firms using knowledge management systems benefit from those systems with an increased level of innovation and an increased likelihood of taking innovative risks (Hock-Doepgen et al., 2021). The implications of this research are that while knowledge management systems, when implemented, can

help smaller firms compete with larger ones, the support apparatus for the knowledge management system must already be there for the system to be useful and successful. That support comes from a culture conducive for and accepting of a knowledge management system implementation, such as having a focus on knowledge creation and offering training to employees (Bratianu et al., 2020).

Employees must have a high sense of trust and organizational commitment for them to be willing to share their knowledge with others and add to the explicit organizational body of knowledge (Eze et al., 2013). Majchrzak et al. (2013) suggested using Wikis as a knowledge repository, with proper safeguards to account for the “anyone can edit” nature of the Wiki format. This format makes it easier for employees to codify tacit knowledge, since they can write it directly into the repository themselves and not have to rely on word of mouth to eventually make it to the right places. Also, decision makers must have a concise plan with clear objectives to meet so everyone knows what they are doing and how their contributions help the business achieve their goals (Marri et al., 2017). These goals could also be placed into the Wiki so everyone has access to them and a consistent message can be made throughout without objectives getting lost in the chain of command.

The Relationship Between Organizational Flexibility and the Independent Variables

This literature review concludes with a focus on the two studies that form the basis of the research instrument to be used in this study. Pertusa-Ortega et al. (2010) conducted a study on Spanish firms that examined the correlation between the organizational structure constructs of complexity, formalization, and decision

centralization and how well an organization uses the knowledge at its disposal to perform and achieve strategic competitive advantage. The foundation of the study is a corollary to the resource-based view of the firm called the knowledge-based view. In the knowledge-based view, knowledge is considered the most valuable resource instead of something more tangible. So, the management and transfer of knowledge is considered a high priority. The study included a variable referring to the dynamism caused by the rapidity to changes, which is used in this dissertation to measure organizational flexibility.

Considering that flexibility could be defined as how quickly (or slowly) an organization responds to both internal and external changes, the variable is a good fit to measure the dependent variable of this study. To effectively adapt to the dynamic changes, organizational creativity is needed, since creativity is a necessary component to foster innovative thinking and developing solutions to problems as they come along (De Vasconcellos et al., 2019). Also, organizational leaders must practice resource flexibility for two reasons: To avoid allocating resources in a wasteful manner to projects that do not need them, and to be flexible enough to respond dynamically to provide resources where needed in real time (Li et al., 2017).

Santos-Vijande et al. (2012) conducted a study on Spanish firms to investigate the possible correlation between organizational learning and the flexibility, strategy, and overall performance of a firm. Of the independent variables they used, four of them were related to organizational learning: Shared interpretation, knowledge dissemination, information acquisition, and organizational memory. Information acquisition, knowledge dissemination, and organizational memory are straightforward as they deal with

knowledge acquisition, sharing, and maintenance respectively. The shared interpretation component is what ties these concepts to organizational culture. As stated previously, perceived trust is a crucial component in an employee's willingness to share information with others (Swift & Hwang, 2013), as is job embeddedness (Kanten et al., 2015). Shared interpretation is associated with both of these, since employees must have a mutual understanding of existing explicit organizational knowledge as well as enough trust in each other to share valuable tacit knowledge through the usual communication channels that are typically found in an organization. Companies wishing to innovate on a regular basis and increase market share should aim toward becoming more flexible (Wang et al., 2011). Utilizing the knowledge acquired from talented employees encourages the development of a culture that is open to knowledge sharing and recognizes the value of the tacit knowledge shared amongst employees (Zheng et al., 2013). In the next chapter, the instruments used in these two studies will be presented, and their function as the research instrument in the overall design of the study will be discussed in further detail.

Summary and Conclusions

Using structure as a foundation, the culture of an organization dictates how valuable knowledge is within the organization, and how it handles using that knowledge to achieve market superiority. Knowledge sharing contributes to flexibility, and flexible organizations can better adapt to the changing marketplace environment. The research into contingency theory shows that organizations set themselves up in ways that best suit their needs, and those who make knowledge sharing a priority will benefit in unique ways. The research into the resource-based view of the firm goes one step further,

showing that the decision makers of these organizations design their structures the way they do to not only best allocate the resources they have available, but also to make themselves strategic competitors in their chosen industry. Information technology is one of those resources, and the research shows that IT is only as capable as the organization allows it to be. Technological and human resources limit the overall capability and effectiveness of the information technology department, which in turn limits how flexible the organization can truly be. Moreover, knowledge is also a resource that must be allocated accordingly, and a lack of it may put an organization at a disadvantage as much as not having the right equipment would. What the proposed study in this dissertation is designed to do is to examine the correlation between culture and flexibility through knowledge management, and we do not fully know how that impacts small- and medium-sized firms in the United States. In the next chapter, the methodology of the study will be discussed, as well as how the study is designed to obtain respondents and statistical data for analysis in subsequent chapters.

Chapter 3: Research Method

The chapter begins by restating the purpose of this study. The purpose of this quantitative correlational study was to examine the relationship between knowledge management culture within organizations and their IT departments, and if certain aspects of knowledge management culture influence the flexibility of those departments. To accomplish this, the dependent variable, organizational flexibility, was correlated with the independent variables of information acquisition, knowledge dissemination, shared interpretation, and organizational memory. The study was designed to examine the possible correlational relationship between knowledge management practices in organizational culture and flexibility within the IT departments of small- and medium-sized Midwestern enterprises. Over the course of this chapter, the research method and methodology will be laid out, with the reasoning behind the method discussed first. Then, the research design will be presented, including the random sampling method that will be used to choose the participants. The data analysis follows, which will detail how the statistical analysis will assist in accepting or rejecting the research questions. Finally, the internal and external validity of the study will be discussed, as well as an overview of the ethical procedures that will be put in place to safeguard both the researcher and the study respondents.

Research Design and Rationale

The dependent variable, organizational flexibility, was measured using the strategic flexibility scale in Santos-Vijande et al. (2012). The independent variables are the components of knowledge management (information acquisition, knowledge

dissemination, shared interpretation, and organizational memory), measured using 7 point Likert-type scales from the research instrument used in Santos-Vijande et al. (2012). Firm age and firm size were considered control variables for the purposes of this study and held constant, since including them as active independent variables could skew the results due to their function as moderating variables in organizational knowledge performance (Vij & Farooq, 2016).

Quantitative research is used to objectively test the relationship between variables using established theories (Creswell, 2009). This study is quantitative in nature because it is designed to examine the correlational relationship between organizational flexibility and organizational culture with respect to how knowledge is acquired, managed, and shared within small- and medium-sized IT departments. The established theories used in this study as the foundation for testing are the RBV and contingency theory. The initial focus on correlation was aligned with the research sub-questions, which were designed to examine the potential relationship between each independent variable and the dependent variable, organizational flexibility. The goal of this aspect of the research design is to identify which independent variables, if any, have correlation with organizational flexibility, and determine how much of a correlation the variables have with each other.

Regression analysis is a secondary part of the research design but is used to address the omnibus research question regarding the statistical significance of the independent variables. Regression analysis will produce a linear combination of the statistically significant independent variables, which will identify which independent (or predictor) variables contribute the most potential effect to a single unit of organizational

flexibility, the dependent variable. Since the study is designed to focus on IT professionals in SMEs in the Midwest, there is an inherent resource constraint acting as a delimitation.

Methodology

Population

The population consisted of IT professionals working in the United States, without regard to the size or age of the firms they work for. Presumably, this would also include self-employed people who work in IT as well.

Sampling and Sampling Procedures

The sampling frame for this study is comprised of all IT professionals working in the eight-state region of the Midwestern United States. These states are Wisconsin, Illinois, Indiana, Michigan, Ohio, Iowa, Minnesota, and Missouri. To be included in the sampling frame and be eligible for sample selection, the following criteria had to be met:

- Must work in IT in some capacity. This includes IT managers, analysts, developers, and other job titles typically associated with IT.
- Must work at an organization headquartered in the aforementioned eight-state region.
- Must work at an organization defined by the U.S. Small Business Association (2019) as a small- or medium-sized enterprise, which means firms that employ less than 1,000 people.

The sample for the study was randomly selected from this sampling frame using systematic random sampling, and members of the population that do not meet these established criteria were excluded from the sampling frame.

To determine the correct sample size to use for this study, G*Power 3.1.9.7 was used (Faul et al., 2009). For the correlation portion of the data analysis, the bivariate normal model for correlation is used since each research question in the study is designed to compare the interval-measured dependent variable (organizational flexibility) with each interval-measured independent variable included in the model in a pairwise fashion. The point biserial model is not a good model to use in this case since neither of the variables in each research question are dichotomous (Warner, 2013); however, using the bivariate normal model indicates that normality assumptions must be satisfied as well. Using a one-tailed bivariate normal model with a medium effect size of 0.3, a power value of 0.95 and the usual error probability of .05, a total minimum sample size of 115 was calculated.

For the regression portion of the data analysis, G*Power was used once again to obtain an effective sample size. A one-tailed fixed linear multiple regression model with a single regression coefficient is used in this case. With a moderate effect size of .15, an error probability of .05, a power value of 0.95, and four predictor variables, a minimum sample size of 74 was obtained. The results from G*Power indicate that the sample size for the study should be at least 115 to provide a sufficiently sized sample for the data analysis and addressing the research questions.

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

The recruitment process utilized systematic random sampling to obtain a sample from the sampling frame. After using the previously stated criteria to develop the sampling frame, every fifth member of the sampling frame was contacted for inclusion to the sample. Names and contact information were obtained via LinkedIn; records will be kept as to who was contacted to avoid potential double-sampling. This data was kept confidential, however. As a backup sampling method, the entire sampling frame was divided into groups of ten, with the random digit list published by RAND (2001) used to select two members from each group of ten at random based on the numbers in the list. The sampling process continued until approximately 300 people were contacted. An optimistic rate of return of 50% would provide a sample size of 150, which is the target number for the study and more than enough to sufficiently address the research questions. If the sample size of 150 is not reached, the selection process continues until it is. If the sample size cannot be reached within the stated parameters, the LinkedIn search expanded to IT professionals working for SMEs nationwide. Systematic random sampling continued to be used, and every fifth member of the new sampling frame was contacted. As a fallback measure to supplement the selection process, SurveyMonkey Audience was utilized to obtain additional responses from the sampling frame until the desired 150-member sample is obtained, if the sample quantity could not be acquired using the original sampling method over the eight-state region or expanding nationwide. Using SurveyMonkey Audience could also generate a sample that exceeds the minimum sample size desired. SurveyMonkey Audience uses randomly sampled panels of

respondents who meet the criteria set by the researcher for research study purposes, selecting respondents from a preset sampling frame for inclusion in the study. So, researchers can reach an intended audience without having to randomly sample from a sampling frame on their own.

All participants were informed beforehand about the study they participated in, its purpose, and what their responses were used for. A link to the research instrument was included in the informed consent form. The respondents were also given the opportunity to view the results of the final study once the dissertation was published. Respondents exited the study upon completing the research instrument; there was no further participation needed from them after that point. All data were collected via SurveyMonkey during the actual collection process and downloaded to an offline, password-protected hard drive once the data collection process ended, with a backup copy stored offline on a flash drive provided by the researcher. Once the data collection process ended, all data were taken offline and deleted from online storage.

Instrumentation and Operationalization of Constructs

Instrumentation

The research instrument is an instrument developed by Santos-Vijande et al. (2012). I obtained copyright permission to use the instrument in the current study; a copy of the permission is located in Appendix A. The original study investigated organizational learning and how it affected an organization's flexibility, overall competitive strategy, and performance. Academic scholars and senior members of management at various organizations gave feedback on the instrument, providing a

theoretical and practical perspective to constructing the items. The authors used the RBV to assert that an organization's resources and overall capabilities form the basis of their business strategy. One of an organization's resources is its body of knowledge and how it uses that knowledge to gain a competitive advantage. The authors claimed that organizational learning can be achieved when individuals share their knowledge through social interaction with others, and that knowledge sharing is a component of the organization's workplace culture. So, if the culture of the organization is one that encourages the free exchange of ideas, knowledge sharing becomes a strategic practice, and organizational knowledge becomes an important strategic asset.

The instrument is appropriate for the current study because of its design focus on investigating the knowledge sharing aspect of organizational culture. The four-step process of knowledge sharing was converted to the four knowledge sharing variables included in the current study. The sampling frame consisted of 1,820 medium sized Spanish and Portuguese companies, representing a cross-section of different industries. Of those contacted, 181 responded, and this amount made up the final sample. Confirmatory factor analysis, robust t-values and maximum likelihood estimation were used to ensure the validity and reliability of the instrument. Different goodness-of-fit models were used, including the Comparative Fit Index (CFI), the Incremental Fit Index (IFI), and the Root Mean Square Error of Approximation (RMSEA). The final model produced a CFI value of 0.92, an IFI value of 0.93, a RMSEA value of 0.05, and a chi-squared value of 500.94; this demonstrated that the constructs included in the instrument design had achieved an acceptable level of validity. In addition to the goodness-of-fit, the

convergent validity of the instrument was deemed acceptable due to the robust t-values exceeding the acceptable thresholds. The composite reliability estimates ranged from 0.83 to 0.94 for the organizational learning measures, while the reliability estimates ranged from 0.83 to 0.9, which is considerably higher than the 0.7 value that Bagozzi and Yi (1988) recommend for reliability. The Chronbach's alpha values for each construct ranged from 0.67 to 0.90, indicating that the research instrument had exceeded acceptable levels for reliability. Some of the items in the original instrument were dropped by the authors due to poor indicator performance; these items are italicized in Appendix B.

Operationalization

The following variables were included in the study and measured using 7-point Likert-type scales. There were five variables: one dependent variable and four independent variables:

Information acquisition: The act of acquiring knowledge from both internal and external sources (Santos-Vijande et al., 2012). Respondents were asked their level of agreement with a series of statements in the instrument related to information acquisition. On the 7-point Likert-type scale, a 1 is a complete disagreement, while a 7 is considered complete agreement. A 4 is treated as a neutral answer, neither agreeing nor disagreeing. An example statement would be: "*We constantly evaluate the need to adapt to the business environment.*"

Knowledge dissemination: The act of distributing acquired knowledge throughout members of an organization (Santos-Vijande et al., 2012). Respondents were asked their level of agreement with statements in the instrument regarding knowledge dissemination.

On the 7-point Likert-type scale, 1 is complete disagreement, 4 is a neutral answer, and 7 is complete agreement. An example statement would be: “*We use databases and organizational files to support our work.*”

Organizational flexibility: The dynamism an organization exhibits when it responds to both internal and external changes to its environment. (Brozovic, 2018; Santos-Vijande et al., 2012). Respondents were asked how easily their organization responds to various changes in the competitive marketplace. On the 7-point Likert-type scale, a value of 1 indicates a difficult response to change, while a value of 7 indicates a very easy response to change. A value of 4 is neutral or moderate. An example for this variable would be: “*Change of customers’ product or service preferences.*”

Organizational memory: The act of committing newly learned knowledge to the permanent body of knowledge in an organization. (Santos-Vijande et al., 2012). Respondents were asked their level of agreement with a series of statements in the instrument pertaining to organizational memory. On the 7-point Likert-type scale, 1 is total disagreement, and 7 is complete agreement. An example statement for this variable would be: “*We carry out training programs for our organization’s members.*”

Shared interpretation: An organization achieves shared interpretation when its members have reached a consensus on what the internal body of knowledge means, why it is important to the organization, and how to best use the knowledge acquired (Santos-Vijande et al., 2012). Respondents were asked their level of agreement with statements regarding shared interpretation. Similar to the other knowledge-sharing variables included in this study, a value of 1 on the 7-point Likert-type scale is total disagreement,

while a value of 7 indicates strong agreement with the given statement. An example statement for this variable would be: “*We do not oppose changes in the way we do things.*”

Data Analysis Plan

The research questions and hypotheses must be restated to highlight what the proposed study is designed to address:

Null hypothesis: There are no statistically significant components of knowledge management that have an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations.

Alternative hypothesis: There is at least one statistically significant component of knowledge management that has an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations.

Sub-hypothesis 1: Information acquisition has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 2: Knowledge dissemination has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 3: Shared interpretation has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 4: Organizational memory has a positive correlational relationship with organizational flexibility.

SPSS statistical software was used for the data analysis portion of the study. To answer the omnibus hypothesis, regression analysis was used; correlation analysis was

used to address the four research sub-questions. In order to get a single value for each independent variable and the dependent variable, the average value for all items pertaining to each variable was used. For example, if shared interpretation had 7 level-of-agreement items associated with it, the average value of those 7 items would be used as the shared interpretation score for that respondent. So, each respondent had five average values compiled, corresponding to the dependent variable and the four independent variables. Descriptive statistics was used to test for normality and heteroscedasticity. Box plots and scatterplots were used to detect outliers, and missing responses were given dummy values to separate them from the others. Missing item responses were subsequently omitted from the average value of each variable. Responses missing item responses for an entire variable may be counted, but that variable was omitted when averaging.

Regression analysis was performed on the entire model, consisting of the dependent variable and the four independent variables. With respect to the omnibus null hypothesis, an independent variable was considered statistically significant if its regression analysis p-value held at the 5 percent level ($p < .05$). The null hypothesis was rejected in favor of the alternative if and only if at least one of the independent variables satisfy this criterion. The statistically significant independent variables were then put into another regression model with the dependent variable to determine the beta coefficients. The beta coefficients indicated how much the dependent variable will increase or decrease if the independent variable increases by 1 (Vogt, 2007). This approximated the potential effect that each independent variable has on organizational flexibility.

To test each sub-question, pairwise correlation was done with the dependent variable (organizational flexibility), and each statistically significant independent variable. Both Pearson's r and the r-squared correlation coefficient were computed. The r value will identify the potential correlation, as well as whether it is positive or negative. The r-squared value indicated how much of the variance in the dependent variable was explained by each independent variable.

Threats to Validity

External Validity

The focus on just IT workers in small- and medium-sized enterprises may make it difficult to generalize the results to all types of workers; however, this threat to external validity has been mitigated by choosing independent variables that are not specific to IT workers. The independent variables chosen for inclusion in this study could be applied to any group of workers, since all members of an organization are subject to the same organizational structure and knowledge sharing culture.

There is also a focus on IT workers in the Midwestern United States due to my familiarity with the area. This focus is also a potential external threat because of cultural differences found in Midwestern small businesses versus those in other parts of the country or the world, for that matter. These differences would also present a difficulty in generalizing the results.

Internal Validity

The research instruments used in this study are from studies published in 2010 and 2012, respectively. As a result, they may be slightly out of date for a study conducted

today. The selection of independent variables was considered to mitigate these problems. The design focus on organizational structure and knowledge sharing is to assist in making the study's findings more generalizable, and for the study itself to be easier to replicate.

The COVID-19 pandemic affected many workers, including those who work at small- and medium-sized businesses. As a result of workers losing their jobs, the available pool of workers for selection in the sampling frame may be smaller than expected when this study was first designed, before the pandemic began. Within the organizations, the environment may have also changed as a result of the pandemic. For example, with more people working from home, and also working on their own schedule, the complexity of the organization could potentially have changed (Bodini et al., 2023). Organizations may have generally become more flexible than before due to the pandemic (Gashi et al., 2022); this could potentially skew the data.

To expand the potential pool of respondents, there was no restriction placed on the type of IT employees included in the study. An internal validity threat arises from doing this. The experiences of IT managers will be different than an analyst, and their experiences will be different from a developer. Also, managers may be more familiar with the inner workings of the organization than a relatively new employee who just started working there. Restricting selection to IT managers would have been a better choice, but far more limiting in the number of potential respondents. In the interest of making sure a large enough pool of people was available to choose from, the decision was made to open the selection to all IT workers in small- and medium-sized enterprises.

Investigating the difference between managers and the rank-and-file would be a worthwhile study, but it will be left as a future study to pursue in Chapter 5.

Attrition is also a concern to validity for this study. There is a concern that the research instrument may run a little longer than expected and may take additional time that respondents may not want to invest. There is a chance that respondents may become frustrated with the length of the questionnaire and simply quit in the middle of filling it out. This threat was considered when selecting the instrument to be used, because respondents' time must be valued if they are going to participate in the study and complete it in a timely fashion.

Construct Validity

The construct validity is not entirely precise in this study due to not being able to find a good research instrument that measures organizational flexibility directly or effectively. The decision was made to find a study that measures a variable that is close enough to be synonymous with flexibility and use that variable to approximate flexibility. The strategic flexibility scale will be used to approximate flexibility, and while it is not a perfect match, it is effective enough to make it work as the dependent variable for the purposes of this study (Benzer et al., 2016; Singh & Rao, 2016).

The research instrument from Santos-Vijande et al., (2012) included in this study was part of a study that was used to look at organizational performance, not organizational flexibility (Santos-Vijande et al., 2012; Camison & Villar-Lopez, 2014). So, not only is the dependent variable not an exact match, but the research instrument itself is not an exact match either. Constructing a research instrument from scratch has

additional steps attached to it, including conducting confirmatory factor analysis for validity and reliability. In the interest of brevity, the decision was made to find previously tested existing research instruments as part of studies that included the variables relevant to the proposed study and adapt the study design to make it feasible as a research instrument.

There are also predictive validity threats present in this study. The four research sub-questions all deal with correlation. The inclusion of statistically significant independent variables to develop the final regression model is designed to add further information regarding the variables' potential combined influence on the dependent variable, since correlation by itself does not imply causation.

Ethical Procedures

All prospective respondents were given a link to the survey via email when they were contacted for potential participation in the study. If contacted within LinkedIn, a link to the survey was sent to prospective respondents via direct message. The informed consent form opened upon clicking the link, and this is where the participants were told what the study is about, the purpose of the study, and how their responses would be used. The respondent was given the option to agree or disagree with the contents of the consent form at the end of the document; if the respondent agreed, the survey commenced. If the respondent declined, the respondent was thanked for their time and consideration for joining the study and survey progression stopped immediately. A copy of the informed consent form was provided for IRB approval. Participation in the study was completely voluntary and anonymous; at no point were the participants asked their name or the name

of the organization they work for. While the researcher may have had access to the names and email addresses of the people included in the study, this information was kept confidential for the entirety of the study and not shared with anyone. While finishing the entire research instrument was encouraged, participants could leave the study at any time. Incomplete responses were not counted. Participants were informed that the results of the study would be posted online when the dissertation was complete and published.

The research instrument itself was stored online, with responses collected in an online database file compatible with SPSS. The data collected was stored in a redundant file offline on a flash drive kept by the researcher as a backup, in case the online data cannot be accessed for some reason. The online data was transferred offline at the conclusion of the data collection process to a computer for statistical analysis, and only the researcher had access to this computer. While the computer will be connected to the internet, the researcher took the computer offline while working on the statistical analysis and did not use cloud storage to house the data during the process. The redundant backup file located on a flash drive will be kept in secure, encrypted storage for five years after publication. After this five-year period ends, all data on the backup file will be deleted and destroyed.

Summary

To examine the correlation between organizational flexibility and information acquisition, knowledge dissemination, shared interpretation, and organizational memory, certain types of statistical analysis must be done. The analysis chosen to answer the research questions at hand are regression and correlational analysis. This chapter was

designed to present the methodology used to answer the research questions included in this study, as well as present the rationale behind choosing quantitative research to do so. Regression and correlational analysis are the most effective data analysis tools to address the overall purpose of the study, which is to examine the correlational relationship between organizational flexibility and the four independent variables. Once the statistically significant variables were established, their potential influence on organizational flexibility was analyzed. The third chapter of this dissertation was designed to explain the methodology in detail. In the next chapter, the results of the data collection will be presented, as well as the tables and plots used to make inferences on the data. The data will assist in either accepting or rejecting the null hypothesis, as well as determining what the potential correlational relationship the variables have with each other.

Chapter 4: Results

The purpose of this study was to examine the culture of knowledge management within organizations and how said culture affects the flexibility of their IT departments. As part of this study, the correlation of the dependent variable, organizational flexibility, with the four included independent variables (information acquisition, knowledge dissemination, shared interpretation, and organizational memory) was also looked at to investigate their pairwise correlational relationships with each other.

There was one primary research question associated with the study: What is the correlation between organizational flexibility and the components of knowledge management in IT departments in SMEs in the Midwestern United States? In addition to the research question, there was an omnibus hypothesis and four sub-hypotheses. The omnibus null hypothesis was no statistically significant components of knowledge management had an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations; this was investigated using regression analysis by placing all the independent variables in a regression model with the dependent variable. Each sub-hypothesis assumes that the dependent variable, organizational flexibility, has a pairwise positive correlational relationship with each independent variable, meaning a sub-hypothesis would fail if that pairwise correlational relationship was zero or negative.

In this chapter, the results of the study are presented. A full statistical analysis of both the regression model and the pairwise correlation is included, as well as whether the hypotheses are accepted or rejected. The chapter concludes with a summary of the

results, as well as a discussion of the effectiveness (or lack thereof) of the results of the study with respect to answering the research question.

Data Collection

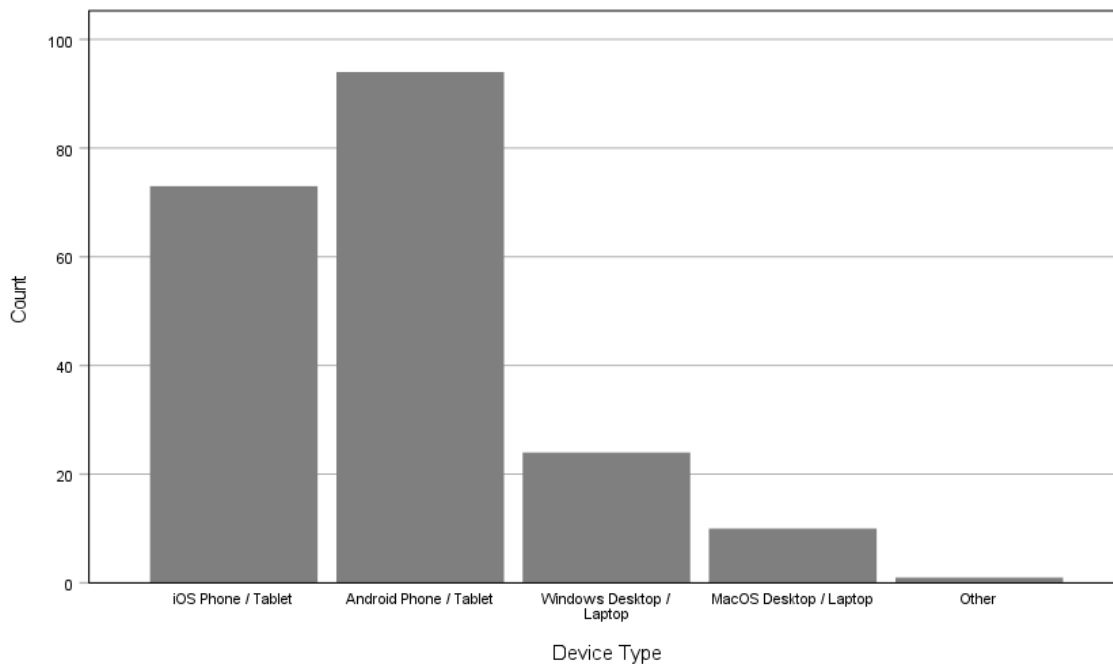
Data collection took place over a 3-month period, from November 2022 to February 2023. LinkedIn was used as the primary recruiting source, using the systematic random sampling system first described in the previous chapter. The original recruiting selection plan was unsuccessful in accumulating the minimum number of respondents required for meaningful statistical analysis; recruitment response rates remained at 0% for several weeks. Expanding the sampling frame to a nationwide pool also proved futile in accumulating the respondents needed. The fallback plan detailed in Chapter 3 was initiated, and SurveyMonkey Audience was utilized to obtain the sample needed for the study. To do this, SurveyMonkey sent the research instrument for this study to a randomly selected group of approximately 200 people who worked in IT as a profession for companies with less than 1,000 workers, based in an eight-state region consisting of Illinois, Indiana, Iowa, Missouri, Minnesota, Wisconsin, Michigan, and Ohio. I chose these parameters to duplicate the initial selection parameters detailed in Chapter 3 of this dissertation. It must be reiterated that since SurveyMonkey Audience was used to accumulate respondents, the identities of individual respondents are not known by the researcher, and the researcher has no record of respondent names or email addresses. What is known is that all respondents met the original selection criteria for inclusion.

Demographic Data

At the conclusion of the data collection process, 213 people were contacted to participate in the study, with 193 of them consenting to participate; this produced a consent rate of approximately 90.6%. Of the 193 who chose to participate, 185 of them completed the entire research instrument; eight of them chose to leave the study without finishing. This produced a completion percentage of approximately 95.8%, and an overall completion rate of 86.85%. SurveyMonkey added demographic questions to the end of the research instrument, and the demographic data showed that 52% of respondents were female versus 47% male. Figures 1 through 3 illustrate the remaining noteworthy demographic findings:

Figure 1

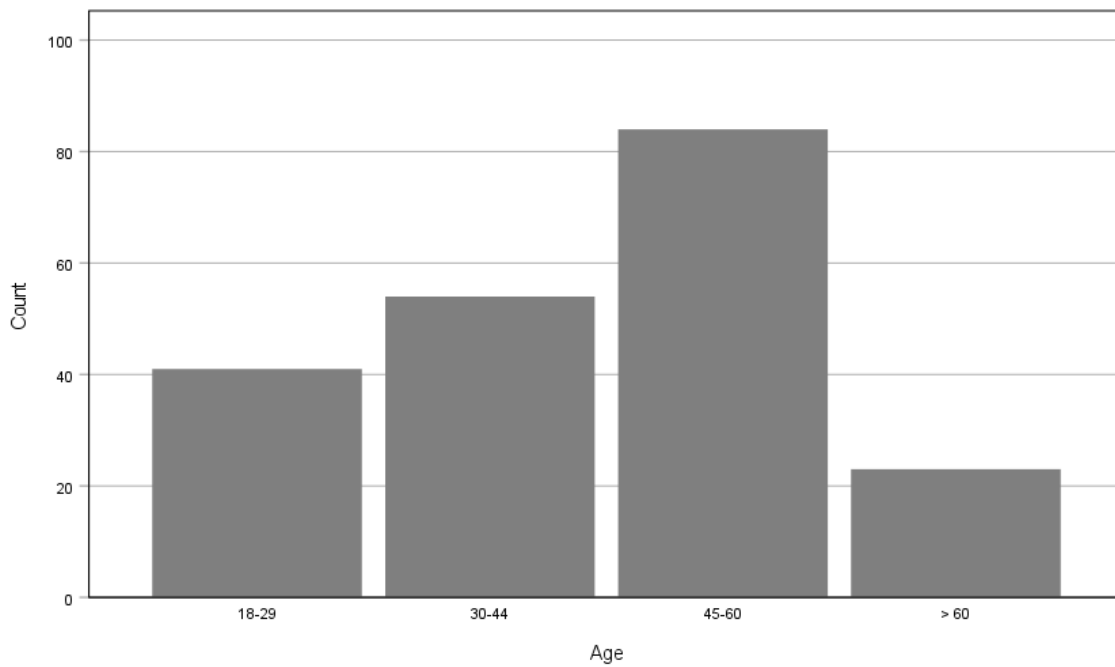
Demographic Data: Device Used to Access Research Instrument



Note. As shown in Figure 1, approximately 82.67% of respondents accessed the research instrument via phone, with considerably more Android users than Apple iOS.

Figure 2

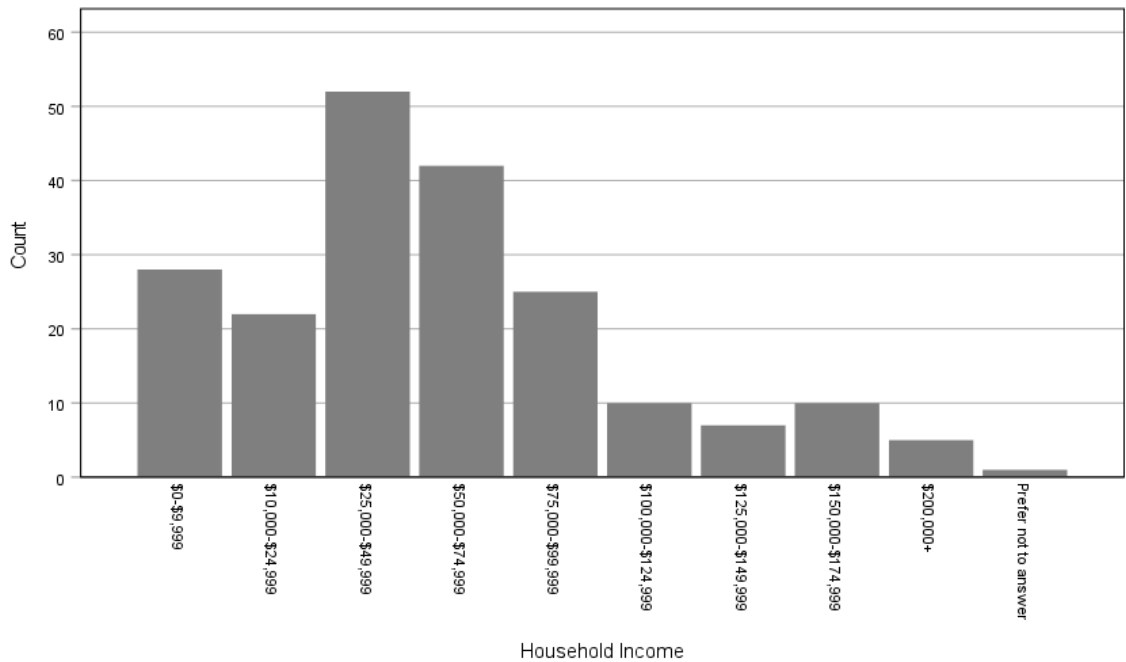
Demographic Data: Age Demographics of Respondents



Note. Figure 2 showed that over 40% of respondents (41.58%) were aged 45-60, and that age demographic was the most represented in the study.

Figure 3

Demographic Data: Respondent Income Categories



Note. Figure 3 showed that 27 of the respondents reported making over \$100,000 per year, with an additional 25 reporting an annual salary of \$75,000 to \$100,000. Overall, an inference could be made from the demographic data that a significant number of the IT professionals that participated in this study may be senior-level contributors or even managers.

Study Results

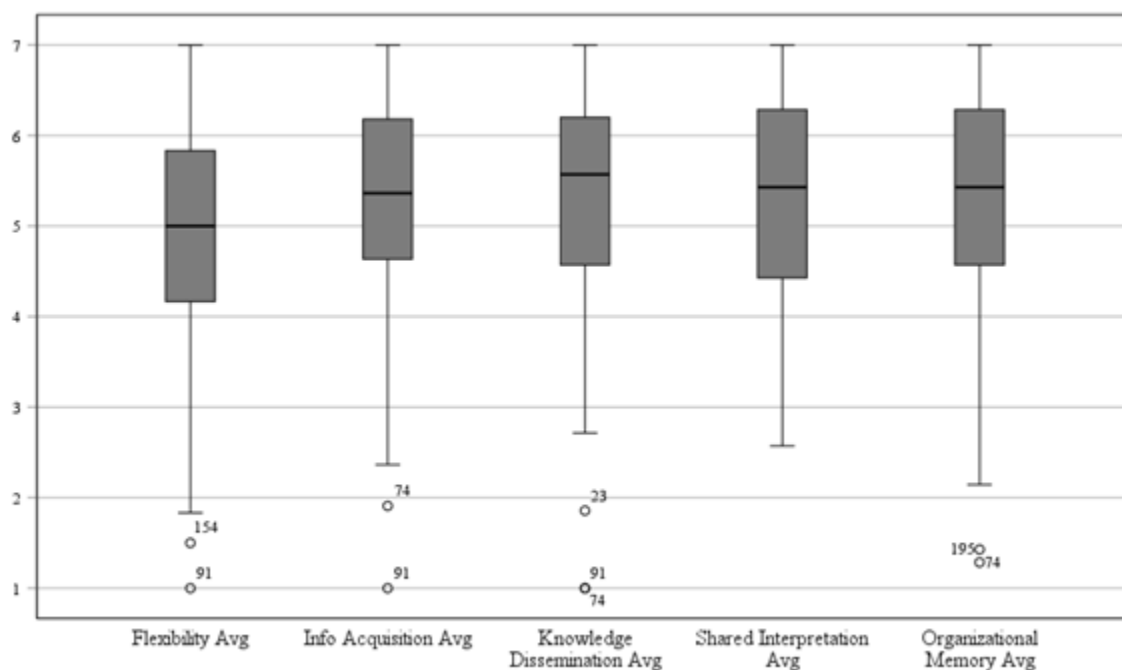
Descriptives and Normality

As stated in Chapter 3, the average value of all items within each category was used for each respondent to obtain a value to use for statistical analysis; for example, there were 11 research instrument items pertaining to the information acquisition

In Table 1, the mean values for all variables are shown; the number of respondents is not uniform among all variables due to a handful of participants skipping items. All variables were slightly left-skewed, and the shared interpretation variable had a negative kurtosis value. The skewness and kurtosis for all variables have values statistically within a typical normality range (between -1 and 1), so the variables can be assumed to have normal distributions (Warner, 2013). All variables had negative skewness, which indicated a larger concentration of higher values.

Figure 4

Boxplots of Dependent and Independent Variables



Note. This figure includes the average value of all items within each construct category. All research instrument items were measured using Likert-type 7-point scales and grouped into one of these 5 categories.

The boxplots in Figure 4, together with the descriptive information in Table 1, illustrated the relative sameness in the variables, with their similar medians, approximate

means and left-skewness favoring the higher values in the scale. The boxplots showed that there were two outliers each in three of the item categories, three outliers in one category, and six outliers in total among respondents. Respondent #91 scored an average of 1 for flexibility, information acquisition, and knowledge dissemination; this is only possible if that respondent recorded an answer of 1 for every item in those categories. This respondent is the outlier among all outliers.

Regression Analysis

For the regression model, the dependent variable, flexibility, was put in a model with the four independent variables: Information acquisition, knowledge dissemination, shared interpretation, and organizational memory. Using the previously defined labels, the proposed regression model would be written as follows:

$$F = B1*IA + B2*KD + B3*SI + B4*OM$$

where B1, B2, B3, and B4 represented the beta coefficients of the independent variables.

Table 2

Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801	.642	.634	.73272

The regression model summary in Table 2 shows an R value of .801, which measures the strength of the relationship between the dependent variable and the independent variables. An R value this high suggests strong correlation. The R-squared value of .642 means that 64.2% of the variance in the regression model can be explained

by the independent variables; an inference can be made from the R-squared value that the regression model does an effective job in explaining much of the variance in flexibility.

Table 3 includes information about the overall significance or insignificance of the regression model.

Table 3

Analysis of Variance (ANOVA) Table of the Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	170.486	4	42.622	79.389	<.001
	Residual	95.026	177	.537		
	Total	265.513	181			

The analysis of variance table (see Table 3) indicated that the model is very significant at the 5% level ($p < .001$). The results of the ANOVA analysis also provided enough evidence to reject the omnibus hypothesis in favor of the alternative. This means that there is at least one statistically significant component of knowledge management that has an influence on the level of organizational flexibility in the IT departments of small- and medium-sized organizations. The actual number of statistically significant variables is shown in Table 4, which is the table of beta coefficients.

Table 4*Regression Model Beta Coefficient Table*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.490	.276		1.776	.077
	Info Acquisition Avg	.819	.109	.779	7.530	<.001
	Knowledge Dissemination Avg	.007	.099	.007	.068	.946
	Shared Interpretation Avg	-.124	.122	-.115	-1.013	.313
	Organizational Memory Avg	.153	.093	.146	1.644	.102

Table 4 completes the picture with regards to statistical significance. Three of the four independent variables failed at the 5% level; only information acquisition proved to be statistically significant ($p < .001$). The beta coefficients also showed that an increase in the information acquisition average by 1 resulted in a .819 increase in flexibility. The other independent variables were shown to not be statistically significant to the model. In fact, the shared interpretation average would decrease by 12.4% with each additional unit of flexibility. Knowledge dissemination appeared to contribute the least to the overall model, and organizational memory only contributed marginally to the model as well. The model does indicate that information acquisition is an overwhelmingly important factor in how flexible IT departments within small- and medium-sized organizations can be.

Correlation Analysis

Pairwise correlation was done on each of the independent variables with the dependent variable, flexibility. The results of this analysis were used to address the following four sub-hypotheses:

Sub-hypothesis 1: Information acquisition has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 2: Knowledge dissemination has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 3: Shared interpretation has a positive correlational relationship with organizational flexibility.

Sub-hypothesis 4: Organizational memory has a positive correlational relationship with organizational flexibility.

Table 5

Pairwise Correlations of Dependent and Independent Variables

		Flexibility Avg	Info Acquisition Avg	Knowledge Dissemination Avg	Shared Interpretation Avg	Organizational Memory Avg
Flexibility Avg	Pearson Correlation	1	.800	.705	.684	.649
	Sig. (2- tailed)		<.001	<.001	<.001	<.001
	N	185	183	183	182	182

Table 5 shows that flexibility had a strong correlational relationship between flexibility and all the independent variables. All independent variables are also

statistically significant at the 5% level ($p < .001$). Information acquisition had the strongest correlation at .800, with organizational memory having the weakest correlation at .649, which is still a relatively strong correlation. It makes sense that information acquisition would have the strongest correlation, considering it was the only statistically significant independent variable in the regression model. Flexibility has a positive correlational relationship with all independent variables, so all proposed sub-hypotheses for this study are held as well. It is interesting to note that while shared interpretation had a positive correlational relationship with flexibility, it has an inversely proportional relationship in the regression model, as an increase in shared interpretation caused a small decrease in flexibility.

Summary

For this research, 213 prospective IT professionals from small and medium-sized Midwestern firms initially participated, and the data compiled provided evidence to make some interesting conclusions with regards to the study. First, the regression model consisting of flexibility as a dependent variable and information acquisition, knowledge dissemination, shared interpretation and organizational memory as independent variables proved to be statistically significant and explained a majority of the variance in the regression line. The omnibus hypothesis was rejected in favor of the alternative, which meant that at least one of the independent variables included was significant. While the regression model was significant, the only statistically significant independent variable in the model was information acquisition. In terms of correlation, all independent variables

had positive correlational relationships with flexibility, which meant that all 4 sub-hypotheses held.

In the next chapter, a full interpretation from both a contingency theory and RBV perspective will be provided, as well as a discussion on the limitations encountered during the data collection. Recommendations for further research and potential corollaries to the research in this dissertation will be discussed. Also, considering the results of this study appear to highlight the importance of information acquisition to the flexibility of the IT department, the role of the IT manager as change agent and information exchange facilitator will be revisited, and how the IT manager can impact social change by creating an information sharing environment.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative correlational study was to examine the knowledge management culture and protocols of small- and medium-sized organizations and how they could potentially be affecting their strategic flexibility. The study was conducted and designed to investigate what aspects of knowledge management culture in organizations contributed the most to how flexible or inflexible the IT departments within these organizations could be. Using a correlational research design and a research instrument from Santos-Vijande et al. (2012), 213 IT professionals from SMEs from the Midwestern United States were contacted in the study; 193 of them decided to participate. In the data collected, it appears that while the four-variable regression model with the independent variables of information acquisition, knowledge dissemination, shared interpretation and organizational memory was significant in predicting the flexibility of IT departments in smaller organizations, only information acquisition was statistically significant ($p < .001$). The regression model explained 64.2% of the variance in flexibility, which suggested that the model was effective; however, as further analysis showed, information acquisition contributed the most to the model by far. Correlation analysis was used to examine the pairwise relationship between the dependent variable of flexibility and each independent variable was shown to be positively correlated with flexibility; as flexibility increased, so did each independent variable. One of the important takeaways from the statistical analysis done in Chapter 4 was that information acquisition appeared to play an important role in the flexibility of SMEs.

In this chapter, a further elaboration of the findings will be discussed through the lenses of the two theoretical underpinnings of this study: contingency theory and the RBV. The section after that will include a perspective on how IT managers can impact social change in their role as organizational change agents using the information from this study. Finally, the chapter will conclude with a summary of the entire dissertation and the useful information can be taken from it.

Interpretation of Findings

The Contingency Theory Lens

Contingency theory would view effective information acquisition as a component of the overall organizational culture, a concept that would be supported and encouraged by middle managers. The results of this study appear to indicate that the acquisition of information is an important predictor in the overall flexibility of IT departments in SMEs. In contingency theory, organizations are structured based on their response to the environments they exist in, both internally and externally (Hatch & Cunliffe, 2006). To emphasize information sharing, basic tenets regarding the exchange of ideas must be put in the organizational structure to support and facilitate information sharing, and that begins with the organization's formalization. To recall, formalization refers to an organization's norms, protocols, and customs that regulate behavior (Pertusa-Ortega et al., 2010). While organizations cannot entirely control their external environments, they can control the internal environments, and knowledge sharing within the organization would become a key component of their day-to-day processes if it were made a priority by the decision makers.

Formalization puts restrictions on the type of knowledge that is shared within an organization, who gets to share that knowledge, as well as who gets to receive it (Kanten et al., 2015). Adopting a knowledge management system that is accommodating to sharing can be beneficial to both employees and management. Tacit knowledge can be shared amongst employees, building upon their own personal knowledge, and improving their skills. Explicit knowledge can be shared by management, creating a repository that everyone can draw from. The members of the organization can then develop a shared interpretation of that explicit knowledge and recognize how it is used within the organization (Imran et al., 2021; Chion et al., 2020). The repository also acts as the memory of the organization, being the storage facility of all knowledge accumulated by the organization over time.

In this study, there were also three other independent variables besides information acquisition: knowledge dissemination, shared interpretation, and organizational memory. While they were statistically insignificant in the regression model for this study, they are still significant when it comes to knowledge management and information acquisition itself. Merely putting the protocols in place to facilitate information acquisition is not enough; for the information to influence the other dimensions of knowledge management included in this study, other aspects of the organizational culture need to be met as well. Employees need to have high levels of trust with each other to influence a willingness to share tacit information with both co-workers and managers (Shateri & Hayat, 2020). Another key ingredient to optimal information acquisition is avoiding organizational silence and encouraging employee communication

with others (Takhsha et al., 2020). The information silos found in more mechanistic organizations are a built-in obstacle to knowledge sharing. Liu et al. (2020) showed that when knowledge sharing is prioritized in organizations, trust amongst employees increases and makes it more likely that employees will share their tacit knowledge not only with each other, but with their managers as well. The acquired information can then be disseminated throughout the organization, with workers forming both a shared interpretation of what the information means and committing it to the general memory of the organization, turning tacit knowledge into explicit knowledge (Imran et al., 2021). If necessary, managers could use tangible incentives to encourage information sharing (Salameh & Zamil, 2020).

To complement the internal information acquisition that takes place via knowledge sharing, business analytics is conducted to acquire external information on competitors, trends in the marketplace, and insights on where the market is currently and where it is heading. Chen and Siau (2020) conducted a study that showed using business analytics worked in tandem with increased flexibility in IT flexibility to contribute to the overall flexibility of the organization. The external information acquired from business analytics work with the internal information gathering to provide decision makers in the organization with a clearer picture on what is going in their internal and external environments, so they can adjust their organizational structures accordingly to be more effective as competitors in the marketplace.

The Resource-Based View of the Firm Lens

The RBV would consider information itself as a resource, so the acquisition of it would be treated no differently than acquiring other finite resources with the goal of achieving a competitive advantage. Recall that Azeem et al. (2021) stated that organizations that value information will treat it as a precious commodity. With that in mind, the results of this study appear to indicate that due to the importance of information acquisition when it comes to flexibility in IT departments, information must be seen by the organization as a valuable resource, right alongside technological, human, and financial resources. Organizations use the information they acquire to develop products and services that are valuable, rare, and inimitable (Barney, 1991), with the hopes that those products and services allow them to stand out in the marketplace and offer something unique that their competitors cannot duplicate or sell for a cheaper price.

The RBV is defined by Wernerfelt (1984) as an organization with an accumulation of finite resources to be allocated in such a way to make the organization competitive. Information is a finite resource of both tacit and explicit knowledge that can be affected by the technological, human, and financial constraints of the organization. Having valuable information to exploit in the marketplace is useful, but if the technological limitations cannot support it, the human resources cannot implement it, and the financial resources cannot afford it, the organization will not be successful in using it.

In IT departments, effectiveness may be linked to both a commitment to investing resources and the business/IT alignment (Jorfi et al., 2011; Mao et al., 2016). Part of that resource commitment must be an investment in human resources as a means of

improving information acquisition and increasing the overall capability of the organization (Jorfi et al., 2011). There are three types of human resources that will greatly contribute to the information repository of the organization. The first is recruiting employees with experience working for competitors within the same industry, which is a common method of information acquisition via human resources. These people may have first-hand knowledge of what goes on inside competing organizations and have tacit knowledge of how those organizations function. The second type of human resources that benefit information acquisition is people with specific knowledge in areas that the organization is deficient in. It may be a productivity suite or a codebase that is difficult for employees to work with, for example. Hiring specialists can be advantageous because they perform functions that no one else in the organization can. In the interest of information sharing, building up trust and comfort with specialists may persuade them to share their unique knowledge with others, disseminating valuable tacit knowledge with their immediate co-workers. The goal is that this knowledge makes its way to the organizational repository and becomes explicit knowledge for everyone to draw from. The third type of human resource to seek out for information acquisition are older workers, who have years of experience working and tacit knowledge that is hard to replicate (Fasbender et al., 2021). If the objectives are to develop products and services that are difficult to duplicate or perform for a cheaper price, experienced workers can contribute to both. It may be the case that an experienced worker is also a valuable specialist, and it is important that the organization obtains as much knowledge as possible

from hard-to-replace employees before they leave the organization (Tang & Martins, 2021).

Limitations of the Study

The primary limitation of the study was the respondent selection process. While a systematic random sampling system was suitable for a quantitative research study, using LinkedIn as the medium in which to carry out that system was cumbersome and inefficient. Most of the members of the sampling frame could not be sent invitations due to LinkedIn restrictions to messaging people who are not already in a user's network. Sending invitations to people who are not at least third degree contacts via direct messaging requires paying for the privilege each time and considering the number of respondents needed for this study, it would be a costly expense.

LinkedIn, being a social network, has groups dedicated to researchers who are looking for respondents in a snowball sampling fashion, and snowball sampling would have been a more effective method to use on LinkedIn, but the validity of the study would have been affected. Using snowball sampling by posting a link to the study in a LinkedIn group does not guarantee that all respondents will come from the desired sampling frame, which could also affect the validity of the study. Performing random sampling on a sampling frame that was easier to access and communicate with would have improved the process. Using another social networking site such as Facebook may have been a better choice, even if it is not as employment oriented as LinkedIn. Using email addresses as a point of contact instead of LinkedIn is another option, but the invitations could be flagged as spam and go unseen by prospective respondents.

Another limitation was sampling all IT workers and keeping them as one large group instead of separating them into categories such as job title. Different workers within IT will have different experiences based on what jobs they perform, and those who are closer to the decision makers or are decision makers themselves could have entirely different levels of agreement with the statements in the research instrument. Separating the sample into groups and examining the data through that lens may provide a different perspective; this will be discussed further in the next section.

Recommendations

The IT manager is a communicator, facilitator, and change agent; it is the managers who are responsible for communicating the directives of the decision makers to those below them (Farrell, 2018). As part of recommendations for further research, limiting the study to just IT leaders at the highest levels would possibly be more effective: corporate suite executives, chief information officers, vice presidents, directors and so forth. This may be a worthwhile path to explore because they are the decision makers for their departments and they presumably would have the knowledge to address the items more accurately in the research instrument, especially those on information acquisition. IT managers in SMEs could be focused on again, or the study could expand to include managers from larger firms as well.

Future researchers may want to examine the potential difference in flexibility among IT departments in dedicated technology firms versus firms in other industries. Creative organizations were shown to be more likely to be productive (Dul & Ceylan, 2014), and the dynamism of the tech industry pushes tech firms to be more flexible to

remain competitive. IT departments of companies in other industries may not face the same challenges that IT departments in tech firms do, and how the organization's culture affects them may not be the same either. This study could be modified to determine how much of a difference there is between tech and non-tech firms, and if it is statistically significant.

There are two research approaches that immediately come to mind that would take the basic parameters of the study included in this dissertation and put a more intense focus on the results. They would also rectify the limitations of respondent selection that were encountered in this study. The first would be limiting the respondents to a single company as part of a quantitative case study, asking respondents the same questions included in this study. The study in this dissertation could also be reconfigured as a different quantitative case study that was designed to examine a specific organization's productivity before and after a drastic change in organizational structure or a drastic shift in the corporate culture. Archival data could be used to determine what productivity looked like before the change, while keeping track of the same pre-change key performance indicators during the post-change for a certain amount of time (3 to 6 months, for example) could give researchers an idea of what productivity looks like after the change. Using the three ambidexterity categories from Helbin and Van Looy (2019) would be a good approach for researchers wishing to expand this idea and investigate what types of ambidexterity impact organizational flexibility the most in times of discontinuous change.

The second approach would be a qualitative case study where the researcher interviews IT workers in a specific company and asks them similar questions to those included in this study, just in an open-ended fashion. The researcher could investigate possible barriers to flexibility in IT departments in organizations to determine what those barriers are. A focus on a family-owned firm in the case study, such as in Broekaert et al. (2016), would be a good direction to go in if the desire is to continue investigating smaller organizations. An alternative direction could examine what information acquisition techniques are the most used in the organization. Either the qualitative or the quantitative case study approaches could be expanded to include large companies, since there could be more archival data available to use and a larger number of workers to interview. The recruiting focus could be easily shifted to IT managers in small- and medium-sized organizations if so desired.

Implications

In addition to their usual duties in managing the department, information technology managers and leaders perform three important functions within the organization that impact social change: Facilitator, communicator, and an advocate for change within their departments and the organization. The IT manager is an information facilitator between their subordinates, as well as being the information intermediary between their subordinates and upper management. This involves motivating employees, encouraging knowledge sharing, and creating an environment conducive to building enough mutual trust to share knowledge with each other (Matoskova et al., 2018). The IT manager is a communicator and is an information repository for their subordinates during

times of change; performing this task can reduce resistance to change and effectively address employee questions about how the new changes will affect their jobs (Simoes & Esposito, 2014; Van den Heuvel et al., 2015). The IT manager is the advocate and change agent for the entire department when communicating with upper management. The IT manager must lobby and persuade upper management for additional resources to help them improve productivity and use the resources allocated to them to assist the business side with achieving its goals (Westover, 2010).

Ambidextrous organizations feature managers and leaders with the ability to successfully balance the exploitative and explorative cycles of ambidexterity, such that the organization can develop new products and services while also leveraging their existing product base (Bettinelli et al., 2017; Chang & Hughes, 2012). IT managers should create an environment as facilitators where a focus on knowledge acquisition and creation is prioritized (Bratianu et al., 2020). This means using a combination of both transactional and transformational leadership skills to motivate and encourage subordinates to develop innovative ideas (Tyssen et al., 2014; Chadwick & Raver, 2015). Servant leadership could be implemented for managers who really want to immerse themselves as facilitators, with the potential of tacit knowledge making its way to less experienced workers in the process (Neubert et al., 2016). With an emphasis on information acquisition, the IT manager should prioritize the transfer of knowledge from experienced workers with valuable tacit knowledge to contribute to the organization's explicit body of knowledge. Also, working to include as many people as possible in the knowledge sharing process makes them feel less ostracized and more willing to share

what they know (Takhsha et al., 2020). Making these small changes to the knowledge management culture could benefit the organization with more innovative ideas from nontraditional channels.

As communicators, IT managers and leaders must act as the intermediary between the workers they supervise and upper management. In times of change ranging from subtle and incremental to drastic and discontinuous, the IT manager must clearly state what the objectives of the changes are, how they affect the IT department, and the impact the changes have to each member of the IT staff. To do this, IT managers must develop trust with their staff as well as have an open channel of communication with management (Van den Heuvel et al., 2015; Simoes & Esposito, 2014). Lack of communication in either direction leads to resistance during times of change, and this resistance is how project implementations fail (Van den Heuvel et al., 2015). Without the information they need to adapt to the new implementations, employees may not be as accepting to working with unfamiliar technologies (Jahanmir & Cavadas, 2018) or system development methodologies (Strode et al., 2022).

Knowledge management culture within organizations impact information technology department in varying ways; the knowledge management culture affects how much the department is prioritized in resource allocation, and largely determines the attention it receives from the top decision makers (Fink & Sukenik, 2011). IT managers must be change agents and advocate for their respective departments, must work within the corporate culture constraints to maximize productivity, and they must also persuade those in charge to increase the allocation of resources toward their departments and argue

for a greater role for the IT department in the organization (Westover, 2010). Change agent IT managers can affect the entire department via positive social change. An inference can be made from results of this study that putting an emphasis on information acquisition should be a top priority, and as an advocate for their department, IT managers should stress to upper management how important their department's role in the information gathering process is (Matoskova et al., 2018). Increasing the budget for improving infrastructure, hiring talented workers, and obtaining the tools needed to create a knowledge-sharing atmosphere will not only benefit the department, but the entire organization. Proving to be a valuable component of the organization with additional attention and resources could transition IT departments that were once neglected in the background into strategic partners with the business side of the organization. This is a type of management innovation that could be beneficial to organizations looking to improve their competitiveness in the marketplace (Vaccaro et al., 2012). To do this, IT managers must take it upon themselves to advocate for greater resources for their departments when given the opportunity to do so.

Conclusions

Organizational culture influences how dynamic and flexible organizations can be, and it all begins with how much they value information. Knowledge management protocols within organizations, which are the aspects of organizational culture that pertain to knowledge, and knowledge management culture affects how IT departments use information to function and support the business. Information acquisition has an outsized effect on flexibility, and the other components of knowledge management that

were looked at in this dissertation (knowledge dissemination, shared interpretation, and organizational memory) act as modifiers once the information has already been acquired. Once acquired, the information is then shared with everyone in some fashion (knowledge dissemination), understood by everyone (shared interpretation), and committed to the organization's body of knowledge as explicit knowledge (organizational memory). While this study was designed to investigate SMEs, the conclusions drawn could be applied to any organization of any size that wishes to be competitive. Valuing information as the rare, inimitable resource that it is will help IT managers advocate for additional resources for their departments, improve the competitive prospects of organizations that prioritize information acquisition, and make knowledge sharing a centerpiece of their organizational culture.

References

- Ahi, A., Baronchelli, G., Kuivalainen, O., & Piantoni, M. (2017). International market entry: How do small and medium-sized enterprises make decisions? *Journal of International Marketing*, 25(1), 1–21. <https://doi.org/10.1509/jim.15.0130>
- Al-Alawi, A. I., Elias, H., & Mehrotra, A. (2022). The effect of organizational culture on knowledge sharing: Case of logistics companies. *2022 International Conference on Data Analytics for Business and Industry (ICDABI)*. <https://doi.org/10.1109/icdabi56818.2022.10041685>
- Aldulaimi, S. H. (2015). Exploring the effect of organizational culture, leadership and strategy on the organizational effectiveness with mediating effect of knowledge management. *International Journal of Economics, Commerce and Management*, 3(4), 121-132. https://www.researchgate.net/profile/Saeed_Aldulaimi/publication/305209168_
- Alexy, O., West, J., Klapper, H., & Reitzig, M. (2017). Surrendering control to gain advantage: Reconciling openness and the resource-based view of the firm. *Strategic Management Journal*, 39(6), 1704–1727. <https://doi.org/10.1002/smj.2706>
- Almeida, M. V., & Soares, A. L. (2014). Knowledge sharing in project-based organizations: Overcoming the informational limbo. *International Journal of Information Management*, 34(6), 770-779. <https://doi.org/10.1016/j.ijinfomgt.2014.07.003>

- Alrawi, K., & Hamdan, Y., Al-Taie, W., & Ibrahim, M. (2011). Organizational culture and the creation of a dynamic environment for knowledge sharing. *American Journal of Social and Management Sciences*, 2(3), 258–264.
<https://doi.org/10.5251/ajsms.2011.2.3.258.264>
- Anderson, P. (1999). Perspective: Complexity theory and organization science. *Organization Science*, 10(3), 216–232. <https://doi.org/10.1287/orsc.10.3.216>
- Anning-Dorson, T. (2021). Organizational culture and leadership as antecedents to organizational flexibility: Implications for SME competitiveness. *Journal of Entrepreneurship in Emerging Economies*, 13(5), 1309–1325.
<https://doi.org/10.1108/jeee-08-202>
- Anser, M. K., Yousaf, Z., Khan, A. & Usman, M. (2021). Towards innovative work behavior through knowledge management infrastructure capabilities: Mediating role of functional flexibility and knowledge sharing. *European Journal of Innovation Management*, 24(2), 461–480. <https://doi.org/10.1108/EJIM-09-2019-0250>
- Anser, M. K., Yousaf, Z., Yasir, M., Sharif, M., Nasir, M. H., Rasheed, M. I., Waheed, J., Hussain, H. & Majid, A. (2022). How to unleash innovative work behavior of SMEs' workers through knowledge sharing? Accessing functional flexibility as a mediator. *European Journal of Innovation Management*, 25(1), 233–248.
<https://doi.org/10.1108/EJIM-11-2019-03320-0288>

- Ashrafi, R., & Mueller, J. (2015). Delineating IT resources and capabilities to obtain competitive advantage and improve firm performance. *Information Systems Management, 32*(1), 15–38. <https://doi.org/10.1080/10580530.2015.983016>
- Auernhammer, J., & Hall, H. (2014). Organizational culture in knowledge creation, creativity and innovation: Toward the Freiraum model. *Journal of Information Science, 40*(2), 154–166. <https://doi.org/10.1177/0165551513508356>
- Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society, 66*, 101635. <https://doi.org/10.1016/j.techsoc.2021.101635>
- Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94. <https://doi.org/10.1007/bf02723327>
- Bamel, U. K., & Bamel, N. (2018). Organizational resources, KM process capability and strategic flexibility: A dynamic resource-capability perspective. *Journal of Knowledge Management, 22*(7), 1555–1572. <https://doi.org/10.1108/jkm-10-2017-0460>
- Barney, J. B. (1986). Strategic factor markets: Expectations, luck, and business strategy. *Management Science, 32*(10), 1231–1241. <https://doi.org/10.1287/mnsc.32.10.1231>
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. <https://doi.org/10.1177/014920639101700108>

- Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27, 643-650. <https://doi.org/10.1177/014920630102700602>
- Barrick, M. R., Thurgood, G. R., Smith, T. A., & Courtright, S. H. (2015). Collective organizational engagement: Linking motivational antecedents, strategic implementation, and firm performance. *Academy of Management Journal*, 58(1), 111–135. <https://doi.org/10.5465/amj.2013.0227>
- Basole, R. C., Seuss, C. D., & Rouse, W. B. (2013). IT innovation adoption by enterprises: Knowledge discovery through text analytics. *Decision Support Systems*, 54(2), 1044-1054. <https://doi.org/10.1016/j.dss.2012.10.029>
- Benzer, J. K., Charns, M. P., Hamdan, S., & Afable, M. (2016). The role of organizational structure in readiness for change: A conceptual integration. *Health Services Management Research*, 30(1), 34–46. <https://doi.org/10.1177/0951484816682396>
- Best, H., & Wolf, C. (Eds.). (2014). *The SAGE handbook of regression analysis and causal inference*. London: SAGE Publications Ltd. <https://doi.org/10.4135/9781446288146>
- Bettinelli, C., Sciascia, S., Randerson, K., & Fayolle, A. (2017). Researching entrepreneurship in family firms. *Journal of Small Business Management*, 55(4), 506–529. <https://doi.org/10.1111/jsbm.12347>
- Blau, P. M. (1970). A formal theory of differentiation in organizations. *American Sociological Review*, 35(2), 201-218. <https://doi.org/10.2307/2093199>

- Bock, A. J., Opsahl, T., George, G., & Gann, D.M. (2012). The effects of culture and structure on strategic flexibility during business model innovation. *Journal of Management Studies*, 49(2), 279-305. <https://doi.org/10.1111/j.1467-6486.2011.01030.x>
- Bodini, A., Leo, C. G., Rissotto, A., Mincarone, P., Fusco, S., Garbarino, S., Guarino, R., Sabina, S., Scoditti, E., Tumolo, M. R., & Ponzini, G. (2023). The medium-term perceived impact of work from home on life and work domains of knowledge workers during COVID-19 pandemic: A survey at the National Research Council of Italy. *Frontiers in Public Health*, 11, 1-13. <https://doi.org/10.3389/fpubh.2023.1151009>
- Bouncken, R. B., Hughes, M., Ratzmann, M., Cesinger, B., & Pesch, R. (2020). Family firms, alliance governance and mutual knowledge creation. *British Journal of Management*, 31(4), 769–791. <https://doi.org/10.1111/1467-8551.12408>
- Bratianu, C., Prelipcean, G., & Bejinaru, R. (2020). Exploring the latent variables which support SMEs to become learning organizations. *Management & Marketing*, 15(2), 154-171. <https://doi.org/10.2478/mmcks-2020-0010>
- Brazeal, D.V., Schenkel, M.T., & Kumar, S. (2014). Beyond the organizational Bounds in CE research: Exploring personal and relational factors in a flat organizational structure. *Journal of Applied Management and Entrepreneurship*, 19(2), 78-106. <https://doi.org/10.9774/gleaf.3709.2014.ap.00006>

- Broekaert, W., Andries, P., & Debackere, K. (2016). Innovation processes in family firms: The relevance of organizational flexibility. *Small Business Economics*, 47(3), 771–785. <https://doi.org/10.1007/s11187-016-9760-7>
- Brozovic, D. (2016). Strategic flexibility: A review of the literature. *International Journal of Management Reviews*, 20(1), 3–31. <https://doi.org/10.1111/ijmr.12111>
- Bulchand-Gidumal, J., & Melián-González, S. (2011). Maximizing the positive influence of IT for improving organizational performance. *The Journal of Strategic Information Systems*, 20(4), 461–478. <https://doi.org/10.1016/j.jsis.2011.09.004>
- Burns, T., & Stalker, G. M. (1961). *The management of innovation*. London, United Kingdom: Tavistock Press.
<https://doi.org/10.1093/acprof:oso/9780198288787.001.0001>
- Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational culture and innovation: A Meta-analytic review. *Journal of Product Innovation Management*, 30(4), 763–781. <https://doi.org/10.1111/jpim.12021>
- Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., Massis, A., & Kraus, S. (2018). Innovation in family firms: A systematic literature review and guidance for future research. *International Journal of Management Reviews*, 21(3), 317–355.
<https://doi.org/10.1111/ijmr.12192>
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902. <https://doi.org/10.1016/j.jbusres.2012.06.004>

- Campbell, J.M., & Park, J. (2016). Extending the resource-based view: Effects of strategic orientation toward community on small business performance. *Journal of Retailing and Consumer Services*, 34, 302–308.
<https://doi.org/10.1016/j.jretconser.2016.01.013>
- Carayannis, E. G., Sindakis, S., & Walter, C. (2014). Business model innovation as lever of organizational sustainability. *The Journal of Technology Transfer*, 40(1), 85–104. <https://doi.org/10.1007/s10961-013-9330-y>
- Carcary, M., Doherty, E., & Thornley, C. (2015). Business innovation and differentiation: Maturing the IT capability. *IT Professional*, (2), 46-53.
<https://doi.org/10.1109/MITP.2015.18>
- Chadwick, I. C., & Raver, J. L. (2015). Motivating organizations to learn: Goal orientation and its influence on organizational learning. *Journal of Management*, 41(3), 957-986. <https://doi.org/10.1177/0149206312443558>
- Chandrasekaran, A., Linderman, K., & Schroeder, R. (2012). Antecedents to ambidexterity competency in high technology organizations. *Journal of Operations Management*, 30(1), 134-151.
<https://doi.org/10.1016/j.jom.2011.10.002>
- Chang, C. L., & Lin, T.-C. (2015). The role of organizational culture in the knowledge management process. *Journal of Knowledge Management*, 19(3), 433–455.
<https://doi.org/10.1108/jkm-08-2014-0353>

- Chang, Y.Y., & Hughes, M. (2012). Drivers of innovation ambidexterity in small-to medium-sized firms. *European Management Journal*, 30(1), 1-17. <https://doi.org/10.1016/j.emj.2011.08.003>
- Chatzoglou, P., Diamantidis, A., Vraimaki, E., Vranakis, S. & Kourtidis, D. (2011). Aligning IT, strategic orientation, and organizational structure. *Business Process Management Journal*, 17(4), 663-687. <https://doi.org/10.1108/14637151111149474>
- Chen, C. J., Huang, J. W., & Hsiao, Y. C. (2010). Knowledge management and innovativeness: The role of organizational climate and structure. *International Journal of Manpower*, 31(8), 848-870. <https://doi.org/10.1108/01437721011088548>
- Chen, J.-L. (2012). The synergistic effects of IT-enabled resources on organizational capabilities and firm performance. *Information & Management*, 49(3-4), 142–150. <https://doi.org/10.1016/j.im.2012.01.005>
- Chen, S., & Chang, B. (2012). The effects of absorptive capacity and decision speed on organizational innovation: A study of organizational structure as an antecedent variable. *Contemporary Management Research*, 8(1), 27-50. <https://doi.org/10.7903/cmr.7996>
- Chen, X., & Siau, K. (2020). Business analytics/Business intelligence and IT structure: Impact on organizational agility. *Journal of Organizational and End User Computing*, 32(4), 138-161. <https://doi.org/10.4018/JOEUC.2020100107>

- Chen, Y., Wang, Y., Nevo, S., Jin, J., Wang, L., & Chow, W. S. (2014). IT capability and organizational performance: The roles of business process agility and environmental factors. *European Journal of Information Systems*, 23(3), 326-342. <https://doi.org/10.1057/ejis.2013.4>
- Chen, Y.-C., & Wu, J.-H. (2011). IT management capability and its impact on the performance of a CIO. *Information & Management*, 48(4-5), 145–156. <https://doi.org/10.1016/j.im.2011.04.001>
- Chión, S. J., Charles, V., & Morales, J. (2020). The impact of organizational culture, organizational structure and technological infrastructure on process improvement through knowledge sharing. *Business Process Management Journal*, 26(6), 1443–1472. <https://doi.org/10.1108/bpmj-10-2018-0279>
- Chowdhury, S. (2005). The role of affect- and cognition-based trust in complex knowledge sharing. *Journal of Managerial Issues*, 17(3), 310–326. <http://www.jstor.org/stable/40604504>
- Claver-Cortés, E., Pertusa-Ortega, E. M., & Molina-Azorín, J. F. (2012). Characteristics of organizational structure relating to hybrid competitive strategy: Implications for performance. *Journal of Business Research*, 65(7), 993-1002. <https://doi.org/10.1016/j.jbusres.2011.04.012>
- Cosh, A., Fu, X., & Hughes, A. (2012). Organization structure and innovation performance in different environments. *Small Business Economics*, 39(2), 301-317. <https://doi.org/10.1007/s11187-010-9304-5>

- Creswell, J. W. (2009). *Research Design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, California: SAGE Publications.
- Csaszar, F. (2012). Organizational structure as a determinant of performance: Evidence from mutual funds. *Strategic Management Journal*, 33, 611-632.
<https://doi.org/10.1002/smj.1969>
- Cui, T., Ye, H. J., Teo, H. H., & Li, J. (2015). Information technology and open innovation: A strategic alignment perspective. *Information & Management*, 52(3), 348-358. <https://doi.org/10.1016/j.im.2014.12.005>
- Daft, R. (1978). A dual-core model of organizational innovation. *Academy of Management Journal*, 21(2), 193-210. <https://doi.org/10.2307/255754>
- Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34(3), 555-590.
<https://doi.org/10.2307/256406>
- Damanpour, F. (1996). Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science*, 42(5), 693-716.
<https://doi.org/10.1287/mnsc.42.5.693>
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423-454.
<https://doi.org/10.1111/j.1740-8784.2011.00233.x>
- De Vasconcellos, S.L., Garrido, I.L., & Parente, R.C. (2019). Organizational creativity as a crucial resource for building international business competence. *International Business Review*, 28(3), 438-449. <https://doi.org/10.1016/j.ibusrev.2018.11.003>

- Dedahanov, A. T., Rhee, C., & Yoon, J. (2017). Organizational structure and innovation performance. *Career Development International*, 22(4), 334–350.
<https://doi.org/10.1108/cdi-12-2016-0234>
- Demartini, M. C., & Beretta, V. (2020). Intellectual capital and SMEs' performance: A structured literature review. *Journal of Small Business Management*, 58(2), 288–332. <https://doi.org/10.1080/00472778.2019.1659680>
- Dul, J., & Ceylan, C. (2014). The impact of a creativity-supporting work environment on a firm's product innovation performance. *Journal of Product Innovation Management*, 31(6), 1254–1267. <https://doi.org/10.1111/jpim.12149>
- Duncan, R. (1979). What is the right organization structure? Decision tree analysis provides the answer. *Organizational Dynamics*, 7(3), 59-80.
[https://doi.org/10.1016/0090-2616\(79\)90027-5](https://doi.org/10.1016/0090-2616(79)90027-5)
- Dutta, S., Silver, M., & Omolayole, O. (2017). Impact of relational management and culture on system success perceptions in an IT outsourcing project. *International Journal of Business and Management*, 12(8), 61-71.
<https://doi.org/10.5539/ijbm.v12n8p61>
- Ecker, B., van Triest, S., & Williams, C. (2013). Management control and the decentralization of R&D. *Journal of Management*, 39(4), 906-927.
<https://doi.org/10.1177/0149206311411507>
- Essawi, M., & Tilchin, O. (2012). Adaptive collaboration model for organizational change. *American Journal of Industrial and Business Management*, 2(4), 145–152. <https://doi.org/10.4236/ajibm.2012.24019>

- Eze, U. C., Goh, G. G. G., Goh, C. Y., & Tan, T. L. (2013). Perspectives of SMEs on knowledge sharing. *VINE: The Journal of Information and Knowledge Management Systems*, 43(2), 210-236.
<https://doi.org/10.1108/03055721311329963>
- Farrell, M. (2018). Leadership reflections: Organizational culture. *Journal of Library Administration*, 58(8), 861–872. <https://doi.org/10.1080/01930826.2018.1516949>
- Fasbender, U., Gerpott, F. H., & Unger, D. (2021). Give and take? Knowledge exchange between older and younger employees as a function of generativity and development striving. *Journal of Knowledge Management*, 25(10), 2420-2443.
<https://doi.org/10.1108/JKM-11-2020-0856>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160. <https://doi.org/10.3758/brm.41.4.1149>
- Fredrickson, J.W. (1986). The strategic decision process and organizational structure. *Academy of Management Review*, 11(2), 280-297.
<https://doi.org/10.5465/AMR.1986.4283101>
- Fink, L., & Sukenik, E. (2011). The effect of organizational factors on the business value of IT: universalistic, contingency, and configurational predictions. *Information Systems Management*, 28, 304-320.
<https://doi.org/10.1080/10580530.2011.610276>

- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>
- Fortado, B., & Fadil, P. (2012). The four faces of organizational culture. *Competitiveness Review*, 22(4), 283-298. <https://doi.org/10.1108/10595421211247132>
- García-Sánchez, E., García-Morales, V., & Martín-Rojas, R. (2018). Influence of technological assets on organizational performance through absorptive capacity, organizational innovation and internal labour flexibility. *Sustainability*, 10(3), 770. <https://doi.org/10.3390/su10030770>
- Gancarczyk, M. (2016). The integrated resource-based and transaction cost approach to the growth process of firms. *Journal of Organizational Change Management*, 29(7), 1189–1216. <https://doi.org/10.1108/jocm-05-2016-0078>
- Gashi, A., Kutllovci, E., & Zhushi, G. (2021). E-work evaluation through work–life balance, job effectiveness, organizational trust and flexibility: Evidence from Kosovo during COVID-19. *Employee Relations: The International Journal*, 44(2), 371–385. <https://doi.org/10.1108/er-04-2021-0136>
- Giannopoulou, E., Gryszkiewicz, L., & Barlatier, P. J. (2014). Creativity for service innovation: A practice-based perspective. *Managing Service Quality: An International Journal*, 24(1), 23-44. <https://doi.org/10.1108/MSQ-03-2013-0044>
- Gibbert, M. (2006). Generalizing about uniqueness. *Journal of Management Inquiry*, 15(2), 124–134. <https://doi.org/10.1177/1056492606287793>

- Grandori, A., & Soda, G. (2006). A relational approach to organization design. *Industry and Innovation*, 13(2), 151-172. <https://doi.org/10.1080/13662710600684316>
- Gu, V. C., Hoffman, J. J., Cao, Q., & Schniederjans, M. J. (2014). The effects of organizational culture and environmental pressures on IT project performance: A moderation perspective. *International Journal of Project Management*, 32(7), 1170–1181. <https://doi.org/10.1016/j.ijproman.2013.12.003>
- Gupta, G., Tan, K. T. L., Ee, Y. S., & Phang, C. S. C. (2018). Resource-based view of information systems: Sustainable and transient competitive advantage perspectives. *Australasian Journal of Information Systems*, 22, 1-9. <https://doi.org/10.3127/ajis.v22i0.1657>
- Haggman, S. K. (2009). Functional actors and perceptions of innovation attributes: Influence on innovation adoption. *European Journal of Innovation Management*, 12(3), 386-407. <https://doi.org/10.1108/14601060910974246>
- Halisah, A., Jayasingam, S., Ramayah, T., & Popa, S. (2021). Social dilemmas in knowledge sharing: An examination of the interplay between knowledge sharing culture and performance climate. *Journal of Knowledge Management*, 25(7), 1708–1725. <https://doi.org/10.1108/jkm-08-2020-0631>
- Handley, H.A.H. & Levis, A. H. (2001). A model to evaluate the effect of organizational adaptation. *Computational and Mathematical Organization Theory*, 7(1), 5-44. <https://doi.org/10.1023/A:1011342615178>
- Hao, Q., Kasper, H., & Muehlbacher, J. (2012). How does organizational structure influence performance through learning and innovation in Austria and China.

Chinese Management Studies, 6(1), 36-52.

<https://doi.org/10.1108/17506141211213717>

Helbin, T., & Van Looy, A. (2019). Business process ambidexterity and its impact on business-IT alignment. A systematic literature review. *2019 13th International Conference on Research Challenges in Information Science (RCIS)*, 1-12.

<https://doi.org/10.1109/rcis.2019.8877073>

Henri, J. F. (2006). Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, 31(1), 77-103. <https://doi.org/10.1016/j.aos.2004.10.003>

Héroux, S., & Fortin, A. (2018). The moderating role of IT-business alignment in the relationship between IT governance, IT competence, and innovation. *Information Systems Management*, 35(2), 98–123.

<https://doi.org/10.1080/10580530.2018.1440729>

Herzig, S.E., & Jimmieson, N.L. (2006). Middle managers' uncertainty management during organizational change. *Leadership & Organization Development Journal*, 27(8), 628-645. <https://doi.org/10.1108/01437730610709264>

Ho, L. (2008). What affects organizational performance. *Industrial Management & Data Systems*, 108(9), 1234-1254. <https://doi.org/10.1108/02635570810914919>

Hock-Doepgen, M., Clauss, T., Kraus, S., & Cheng, C. F. (2021). Knowledge management capabilities and organizational risk-taking for business model innovation in SMEs. *Journal of Business Research*, 130, 683-697.

<https://doi.org/10.1016/j.jbusres.2019.12.001>

- Huang, X., Rode, J., & Schroeder, R. (2011). Organizational structure and continuous improvement and learning: Moderating effects of cultural endorsement of participative leadership. *Journal of International Business Studies*, 42, 1103-1120. <https://doi.org/10.1057/jibs.2011.33>
- Huie, C. P., Cassaberry, T., & Rivera, A. K. (2020). The impact of tacit knowledge sharing on job performance. *International Journal on Social and Education Sciences*, 2(1), 34-40. <https://files.eric.ed.gov/fulltext/EJ1264026.pdf>
- Hull, F. & Hage, J. (1982). Organizing for innovation: Beyond Burns and Stalker's organic type. *Sociology*, 16(4), 564-577. <https://doi.org/10.1177/0038038582016004006>
- Imran, Z., Shafique, O., Najeeb, W., & Usman Khizar, H. M. (2021). Impact of knowledge management environment on knowledge sharing processes. *Ilkogretim Online*, 20(5), 1465-1478. <https://doi.org/10.17051/ilkonline.2021.05.163>
- Ioannides, M. (2012). Complexity and organizational architecture. *Mathematical Social Sciences*, 64, 193-202. <https://doi.org/10.1016/j.mathsocsci.2012.04.005>
- Ismail, A., & Mamat, M. (2012). The relationship between information technology, process innovation and organizational performance. *International Journal of Business and Social Science*, 3(2), 268-274. http://ijbssnet.com/journals/Vol_3_No_2_Special_Issue_January_2012/28.pdf
- Jahanmir, S. F., & Cavadas, J. (2018). Factors affecting late adoption of digital innovations. *Journal of Business Research*, 88, 337–343. <https://doi.org/10.1016/j.jbusres.2018.01.058>

- Jain, R. (2010). Innovation in organizations: A comprehensive conceptual framework for future research. *South Asian Journal of Management*, 17(2), 81-111.
<https://www.proquest.com/scholarly-journals/innovation-organizations-comprehensive-conceptual/docview/748831338/se-2?accountid=14872>
- Jia, R., Hu, W., & LI, S. (2021). Ambidextrous leadership and organizational innovation: The importance of knowledge search and strategic flexibility. *Journal of Knowledge Management*, 26(3), 781–801. <https://doi.org/10.1108/jkm-07-2020-0544>
- Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research*, 64(4), 408-417.
<https://doi.org/10.1016/j.jbusres.2010.09.010>
- Joachim, N., Beimborn, D., & Weitzel, T. (2013). The influence of SOA governance mechanisms on IT flexibility and service reuse. *The Journal of Strategic Information Systems*, 22(1), 86-101. <https://doi.org/10.1016/j.jsis.2012.10.003>
- Johannsen, D. (2012). Designing for decision making. *Educational Technology Research and Development*, 60, 341-359. <https://doi.org/10.1007/s11423-011-9230-5>
- Jorfi, S., Nor, K. M., & Najjar, L. (2011). The relationships between IT flexibility, IT-business strategic alignment, and IT capability. *International Journal of Managing Information Technology*, 3(1), 16-31.
<https://doi.org/10.5121/ijmit.2011.3102>
- Kalton, G. (1983). *Introduction to Survey Sampling*. Thousand Oaks, CA: SAGE Publications. <https://doi.org/10.4135/9781412984683>

- Kalyar, M.N., & Rafi, N. (2013). Organizational learning culture: An ingenious device for promoting firm's innovativeness. *The Service Industries Journal*, 33(12), 1135-1147. <https://doi.org/10.1080/02642069.2012.716828>
- Kanten, P., Kanten, S., & Gurlek, M. (2015). The effects of organizational structures and learning organization on job embeddedness and individual adaptive performance. *Procedia Economics and Finance*, 23, 1358–1366. [https://doi.org/10.1016/s2212-5671\(15\)00523-7](https://doi.org/10.1016/s2212-5671(15)00523-7)
- Khan, S. H., Majid, A., Yasir, M., Javed, A., & Shah, H. A. (2021). The role of social capital in augmenting strategic renewal of SMEs: Does entrepreneurial orientation and organizational flexibility really matter? *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(2), 227–245. <https://doi.org/10.1108/wjemsd-04-2020-0029>
- Khani, N., Nor, K. M., Hakimpoor, H., Bahrami, M., & Salavati, S. (2011). IS/IT capability and strategic information system planning (SISP) success. *International Journal of Managing Information Technology*, 3(3), 28-37. <https://doi.org/10.5121/ijmit.2011.3303>
- Kim, S., Paik, W., & Lee, C. (2014). Does bureaucracy facilitate the effect of information technology (IT)? *International Review of Public Administration*, 19(3), 219–237. <https://doi.org/10.1080/12294659.2014.942050>
- Koen, P., Bertels, H., Eslum, I., Orroth, M., & Tollett, B. (2010). Breakthrough innovation dilemmas. *Research-Technology Management*, 53(6), 48-51. Retrieved from ABI/Inform Global Database.

- Koohborfardhaghghi, S., & Altmann, J. (2017). How organizational structure affects organizational learning. *Journal of Integrated Design and Process Science*, 21(1), 43–60. <https://doi.org/10.3233/jid-2017-0006>
- Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36(1), 349-372. <https://doi.org/10.1177/0149206309350775>
- Kumar, R. L., & Stylianou, A. C. (2014). A process model for analyzing and managing flexibility in information systems. *European Journal of Information Systems*, 23(2), 151-184. <https://doi.org/10.1057/ejis.2012.53>
- Lawrence, P.R., & Lorsch, J.W. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1), 1-47. <https://doi.org/10.2307/2391211>
- Lee, C., & Yang, H. (2011). Organization structure, competition and performance measurement systems and their joint effects on performance. *Management Accounting Research*, 22, 84-104. <https://doi.org/10.1016/j.mar.2010.10.003>
- Lee, J., Min, J., & Lee, H. (2016). The effect of organizational structure on open innovation: A quadratic equation. *Procedia Computer Science*, 91, 492–501. <https://doi.org/10.1016/j.procs.2016.07.128>
- Li, Y., Li, P. P., Wang, H., & Ma, Y. (2017). How do resource structuring and strategic flexibility interact to shape radical innovation? *Journal of Product Innovation Management*, 34(4), 471–491. <https://doi.org/10.1111/jpim.12389>

- Liao, C., Chuang, S. H., & To, P. L. (2011). How knowledge management mediates the relationship between environment and organizational structure. *Journal of Business Research*, 64(7), 728-736. <https://doi.org/10.1016/j.jbusres.2010.08.001>
- Liao, Y., & Barnes, J. (2015). Knowledge acquisition and product innovation flexibility in SMEs. *Business Process Management Journal*, 21(6), 1257–1278. <https://doi.org/10.1108/bpmj-05-2014-0039>
- Lin, P. C., Lo, C. H., & Lu, H. K. (2013). Toward an IT-driven organizational structure design model. *Journal of Applied Sciences*, 13(13), 2526-2531.
- Lim, J. H., Stratopoulos, T. C., & Wirjanto, T. S. (2012). Role of IT executives in the firm's ability to achieve competitive advantage through IT capability. *International Journal of Accounting Information Systems*, 13(1), 21-40. <https://doi.org/10.1016/j.accinf.2011.07.001>
- Liu, M. L., Lin, C. P., Chen, M. L., Chen, P. C., & Chen, K. J. (2020). Strengthening knowledge sharing and job dedication: The roles of corporate social responsibility and ethical leadership. *Leadership & Organization Development Journal*, 41(1), 73-87. <https://doi.org/10.1108/LODJ-06-2019-0278>
- Luekitinan, W. (2014). Organization climates and individual innovation. *Advances in Management and Applied Economics*, 4(1), 123-125. http://www.scienpress.com/journal_focus.asp?main_id=55&Sub_id=IV&Issue=1075

- Mahmoudsalehi, M., Moradkhannejad, R., & Safari, K. (2012). How knowledge management is affected by organizational structure. *The Learning Organization, 19*(6), 518-528. <https://doi.org/10.1108/09696471211266974>
- Majchrzak, A., Wagner, C., & Yates, D. (2013). The impact of shaping on knowledge reuse for organizational improvement with wikis. *MIS Quarterly, 37*(2), 455–469. <https://doi.org/10.25300/misq/2013/37.2.07>
- Malakooti, B. (2012). Decision making process: Typology, intelligence, and optimization. *Journal of Intelligent Manufacturing, 23*(3), 733-746. <https://doi.org/10.1007/s10845-010-0424-1>
- Mao, H., Liu, S., Zhang, J., & Deng, Z. (2016). Information technology resource, knowledge management capability, and competitive advantage: The moderating role of resource commitment. *International Journal of Information Management, 36*(6), 1062–1074. <https://doi.org/10.1016/j.ijinfomgt.2016.07.001>
- Mardani, A., Jusoh, A., MD Nor, K., Khalifah, Z., Zakwan, N., & Valipour, A. (2015). Multiple criteria decision-making techniques and their applications – a review of the literature from 2000 to 2014. *Economic Research-Ekonomska Istraživanja, 28*(1), 516–571. <https://doi.org/10.1080/1331677x.2015.1075139>
- Marginson, D. (2009). Value systems as a mechanism for organizational change. *Journal of Accounting & Organizational Change, 5*(1), 7-34. <https://doi.org/10.1108/18325910910932197>
- Marri, H. B., Gunasekaran, A., Gopang, M. A., Nebhwani, M., & Soomro, A. S. (2016). Assessment of CIM implementation in SMEs: A multiple case study approach.

- The International Journal of Advanced Manufacturing Technology*, 90(5-8), 2193–2206. <https://doi.org/10.1007/s00170-016-9543-y>
- Martin-Rios, C. (2018). Organizational control rationales in knowledge-intensive organizations: An integrative review of emerging trends. *Journal of Public Affairs*, 18(1), e1695. <https://doi.org/10.1002/pa.1695>
- Martinez-Leon, I. & Martinez-Garcia, J. (2011). The influence of organizational structure on organizational learning. *International Journal of Manpower*, 32(5/6), 537-566. <https://doi.org/10.1108/01437721111158198>
- Marshall, B., Curry, M., & Reitsma, R. (2011). Organizational information technology norms and IT quality. *Communications of the IIMA*, 11(4), 31-48. <https://scholarworks.lib.csusb.edu/ciima/vol11/iss4/3>
- Martins, E. C., & Terblanche, F. (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74. <https://doi.org/10.1108/14601060310456337>
- Matošková, J., Macurová, L., & Tomancová, L. (2018). A link between knowledge sharing and managers' characteristics. *Leadership & Organization Development Journal*, 39(8), 1024–1036. <https://doi.org/10.1108/lodj-06-2018-0236>
- McFarlan, F.W. (1984). Information technology changes the way you compete. *Harvard Business Review*, May-June, 98-103. Retrieved from http://www.academia.edu/download/3456272/Technology_Changes.pdf

- Menguc, B., & Auh, S. (2010). Development and return on execution of product innovation capabilities: The role of organizational structure. *Industrial Marketing Management*, 39(5), 820-831. <https://doi.org/10.1016/j.indmarman.2009.08.004>
- Miller, D. (1987). Strategy making and structure: Analysis and implications for performance. *Academy Of Management Journal*, 30(1), 7-32. <https://doi.org/10.2307/255893>
- Mintzberg, H. (1980). Structure in 5's: A synthesis of the research on organization design. *Management Science*, 26(3), 322-341. <https://doi.org/10.1287/mnsc.26.3.322>
- Moldoveanu, M., & Bauer, R. (2004). On the relationship between organizational complexity and organizational structuration. *Organization Science*, 15(1), 98-118. <https://doi.org/10.1287/orsc.1030.0058>
- Morgan, G. (2006). *Images of Organization*. Thousand Oaks, California: Sage Publications.
- Morgan, G.A., Gliner, J.A., & Harmon, R.J. (1999). Quantitative research approaches. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38(12), 1595-1597. <https://doi.org/10.1097/00004583-199912000-00022>
- Nan, N. (2011). Capturing bottom-up information technology use processes: A complex adaptive systems model. *MIS Quarterly*, 35(2), 505-532. <https://doi.org/10.2307/23044054>
- Naranjo-Valencia, J., Sanz-Valle, R., & Jiménez-Jiménez., D. (2010). Organizational culture as determinant of product innovation. *European Journal of Innovation Management*, 13(4), 466-480. <https://doi.org/10.1108/14601061011086294>

- Naranjo-Valencia, J., Jimenez-Jimenez, D., & Sanz-Valle, R. (2011). Innovation or imitation? The role of organizational culture. *Management Decision*, 55-72.
[https://doi.org/ 10.1108/00251741111094437](https://doi.org/10.1108/00251741111094437)
- Neubert, M. J., Hunter, E. M., & Tolentino, R. C. (2016). A servant leader and their stakeholders: When does organizational structure enhance a leader's influence? *The Leadership Quarterly*, 27(6), 896-910.
<https://doi.org/10.1016/j.leaqua.2016.05.005>
- Nutt, P. C. (1998). How decision makers evaluate alternatives and the influence of complexity. *Management Science*, 44(8), 1148-1166.
<https://doi.org/10.1287/mnsc.44.8.1148>
- Oliveira, M., Curado, C., Balle, A.R., & Kianto, A. (2020). Knowledge sharing, intellectual capital and organizational results in SMES: Are they related? *Journal of Intellectual Capital*, 21(6), 893–911. <https://doi.org/10.1108/jic-04-2019-0077>
- O'Reilly, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *The Academy of Management Perspectives*, 27(4), 324-338.
<https://doi.org/10.5465/amp.2013.0025>
- Orlikowski, W., & Robey, D. (1991). Information technology and the structuring of organizations. *Information Systems Research*, 2(2), 143-169.
<https://doi.org/10.1287/isre.2.2.143>
- Paghaleh, M. J., Shafiezhadeh, E., & Mohammadi, M. (2011). Information technology and its deficiencies in sharing organizational knowledge. *International Journal of*

Business and Social Science, 2(8), 192-198.

http://www.ijbssnet.com/journals/Vol._2_No._8%3B_May_2011/24.pdf

- Paillé, P., & Raineri, N. (2015). Linking perceived corporate environmental policies and employees eco-initiatives: The influence of perceived organizational support and psychological contract breach. *Journal of Business Research*, 68(11), 2404–2411. <https://doi.org/10.1016/j.jbusres.2015.02.021>
- Pee, L.G., & Kankanhalli, A. (2016). Interactions among factors influencing knowledge management in public-sector organizations: A resource-based view. *Government Information Quarterly*, 33(1), 188–199. <https://doi.org/10.1016/j.giq.2015.06.002>
- Perrow, C. (1967). A framework for the comparative analysis of organizations. *American Sociological Review*, 32(2), 194-208. <https://doi.org/10.2307/2091811>
- Pertusa-Ortega, E., Zaragoza-Saez, P., & Claver-Cortes, E. (2010). Can formalization, complexity, and centralization influence knowledge performance. *Journal of Business Research*, 63(3), 310-320. <https://doi.org/10.1016/j.jbusres.2009.03.015>
- Peteraf, M. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179-191. <https://www.jstor.org/stable/2486921>
- Phelan, S. E., & Lin, Z. (2001). Promotion systems and organizational performance: A contingency model. *Computational and Mathematical Organization Theory*, 7(3), 207-232. <https://doi.org/10.1023/A:1011986519310>

- Pierce, J.L., & Delbecq, A.L. (1977). Organization structure, individual attitudes and innovation. *Academy of Management Review*, 2(1), 27-37.
<https://doi.org/10.5465/AMR.1977.4409154>
- Pleshko, L. & Nickerson, I. (2008). Strategic orientation, organizational structure, and the associated effects on performance in industrial firms. *Academy of Strategic Management Journal*, 7, 95-110.
<http://www.alliedacademies.org/articles/asmjvol7no12008.pdf#page=103>
- Porter, M. E. (1979). How competitive forces shape strategy. *Harvard Business Review*, March/April 1979, 137-145.
http://www.academia.edu/download/32577543/How_competitive_forces_shape_strategy.pdf
- Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard Business Review*, January 2008, 25-41.
http://www.academia.edu/download/32580687/HBR_on_Strategy.pdf#page=25
- Puriwat, W., & Hoonsopon, D. (2021). Cultivating product innovation performance through creativity: The impact of organizational agility and flexibility under technological turbulence. *Journal of Manufacturing Technology Management*, 33(4), 741–762. <https://doi.org/10.1108/jmtm-10-2020-0420>
- RAND. (2001). *A Million Random Digits with 100,000 Normal Deviates*. Santa Monica, California: RAND Distribution.
http://www.rand.org/pubs/monograph_reports/MR1418.html

- Ramendran, C. S. P. R., Raman, G., Mohamed, R. K. M. H., Beleya, P., & Nodeson, S. (2013). Organizational flexibility and its implications on employees' productivity. *Interdisciplinary Journal of Contemporary Research in Business*, 4(10), 298-316. <http://www.academia.edu/download/33201913/298-316.pdf-Flexi.pdf>
- Ravasan, A. Z., Nabavi, A., & Mansouri, T. (2015). Can organizational structure influence ERP success? *International Journal of Information Systems and Supply Chain Management*, 8(1), 39-59. <https://doi.org/10.4018/ijisscm.2015010103>
- Raymond, L., Uwizeyemungu, S., Fabi, B., & St-Pierre, J. (2018). IT capabilities for product innovation in SMEs: A configurational approach. *Information Technology and Management*, 19(1), 75-87. <https://doi.org/10.1007/s10799-017-0276-x>
- Razavi, S. H., & Attarnezhad, O. (2013). Management of organizational innovation. *International Journal of Business and Social Science*, 4(1), 226-232. http://www.ijbssnet.com/journals/Vol_4_No_1_January_2013/26.pdf
- Reynolds, P., & Yetton, P. (2015). Aligning business and IT strategies in multi-business organizations. *Journal of Information Technology*, 30(2), 101–118. <https://doi.org/10.1057/jit.2015.1>
- Rhee, J., Seog, S. D., Bozorov, F., & Dedahanov, A. T. (2017). Organizational structure and employees' innovative behavior: The mediating role of empowerment. *Social Behavior and Personality: An international journal*, 45(9), 1523-1536. <https://doi.org/10.2224/sbp.6433>

- Rialti, R., Marzi, G., Caputo, A., & Mayah, K. A. (2020). Achieving strategic flexibility in the era of big data. *Management Decision*, 58(8), 1585–1600.
<https://doi.org/10.1108/md-09-2019-1237>
- Rich, P. (1992). The organizational taxonomy: Definition and design. *Academy of Management.the Academy of Management Review*, 17(4), 758-781.
<https://doi.org/10.5465/amr.1992.4279068>
- Richard, P., Divinney, T., Yip, G., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management*, 35(3), 718-804. <https://doi.org/10.1177/0149206308330560>
- Rockwell, S. (2019). A resource-based framework for strategically managing identity. *Journal of Organizational Change Management*, 32(1), 80–102.
<https://doi.org/10.1108/jocm-01-2018-0012>
- Rondeau, P. J., Ragu-Nathan, T. S., & Vonderembse, M. A. (2010). The impact of IS planning effectiveness on IS responsiveness, user training, and user skill development within manufacturing firms. *International Management Review*, 6(1), 42-57.
<https://search.proquest.com/openview/e4c357c5dcef670bdad5a73e4e2bbc0d/1?pq-origsite=gscholar&cbl=28202>
- Rudramuniyaiah, P., Joshi, K., Shah, V., & Ramanujan, S. (2020). Examining cognitive and emotive influences on knowledge sharing behavior among IT professionals: An empirical analysis. *e-Service Journal*, 11(3), 1-35.
<https://doi.org/10.2979/eservicej.11.3.01>

- Sabherwal, R., Sabherwal, S., Havaknor, T., & Steelman, Z. (2019). How does strategic alignment affect firm performance? The roles of information technology investment and environmental uncertainty. *MIS Quarterly*, 43(2), 453–474. <https://doi.org/10.25300/misq/2019/13626>
- Salameh, A.A.M., & Zamil, A.M.A. (2020). The effects of reward systems and organizational structure on tacit knowledge sharing. *Management Science Letters*, 10, 2229–2236. <https://doi.org/10.5267/j.msl.2020.3.013>
- Santos, F.M., & Eisenhardt, K. (2005). Organizational boundaries and theories of organization. *Organization Science*, 16(5), 491-508. <https://doi.org/10.1287/orsc.1050.0152>
- Santos-Vijande, M. L., López-Sánchez, J. Á., & Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65(8), 1079-1089. <https://doi.org/10.1016/j.jbusres.2011.09.002>
- Schreuders, J., & Legesse, A. (2012). Organizational ambidexterity: How small technology firms balance innovation and support. *Technology Innovation Management Review*, 2(2), 17–21. <https://doi.org/10.22215/timreview522>
- Selcer, A., & Decker, P. (2012). The structuration of ambidexterity: An urge for caution in organizational design. *International Journal of Organizational Innovation*, 5(1), 65-96. <http://www.ijoi-online.org/attachments/article/31/FINAL%20ISSUE%20VOL%205%20%20NU>
[M%201%20SUMMER%202012%20revised.pdf#page=65](http://www.ijoi-online.org/attachments/article/31/FINAL%20ISSUE%20VOL%205%20%20NUM%201%20SUMMER%202012%20revised.pdf#page=65)

- Shakina, E., & Barajas, A. (2013). The contribution of intellectual capital to value creation. *Contemporary Economics*, 7(4), 41-56.
<http://www.econstor.eu/bitstream/10419/105435/1/776065017.pdf>
- Shateri, K., & Hayat, A.A. (2020). Investigating the mediating role of organizational trust in the relationship between perceived organizational support and knowledge sharing. *Knowledge Management & E-Learning: An International Journal*, 12(3), 298–314. <https://doi.org/10.34105/j.kmel.2020.12.016>
- Shoghi, B., & Safieepoor, A. (2013). The effects of organizational structure on the entrepreneurial orientation of the employees. *International Journal of Academic Research in Business and Social Sciences*, 3(11), 90-99.
<https://doi.org/10.6007/IJARBSS/v3-i11/322>
- Shrafat, F. D. (2018). Examining the factors influencing knowledge management system (KMS) adoption in small and medium enterprises SMEs. *Business Process Management Journal*, 24(1), 234-265. <https://doi.org/10.1108/BPMJ-10-2016-0221>
- Simoes, P., & Esposito, M. (2014). Improving change management: how communication nature influences resistance to change. *Journal of Management Development*, 33(4), 324–341. <https://doi.org/10.1108/jmd-05-2012-0058>
- Singh, B., & Rao, M.K. (2016). Effect of intellectual capital on dynamic capabilities. *Journal of Organizational Change Management*, 29(2), 129–149.
<https://doi.org/10.1108/jocm-12-2014-0225>

- Smit, J., & DelleMijn, M. (2011). The relationship between information systems management and organizational culture. *Communications of the IIMA*, 11(3), 21-33.
http://www.iima.org/index.php?option=com_phocadownload&view=category&download=340:the-relationship-between-information-systems-management-and-organizational-culture&id=57:2011-volume-11-issue-3&Itemid=68
- Song, M., & Chen, Y. (2014). Organizational attributes, market growth, and product innovation. *Journal of Product Innovation Management*, 31(6), 1312–1329.
<https://doi.org/10.1111/jpim.12185>
- Sook-Ling, L., Ismail, M. A., & Yee-Yen, Y. (2015). Information infrastructure capability and organisational competitive advantage. *International Journal of Operations & Production Management*, 35(7), 1032–1055.
<https://doi.org/10.1108/ijopm-12-2013-0553>
- Steiger, J. S., Hammou, K. A., & Galib, M. H. (2014). An examination of the influence of organizational structure types and management levels on knowledge management practices in organizations. *International Journal of Business and Management*, 9(6), 43-57. <https://doi.org/10.5539/ijbm.v9n6p43>
- Strode, D. E., Sharp, H., Barroca, L., Gregory, P., & Taylor, K. (2022). Tensions in organizations transforming to agility. *IEEE Transactions on Engineering Management*, 69(6), 3572–3583. <https://doi.org/10.1109/tem.2022.3160415>

- Susskind, A. M., Moore, O. A., & Kacmar, K. M. (2018). Organizational downsizing: How communication networks connect with employee performance. *Cornell Hospitality Report*, 18(4), 3-12. <https://scholarship.sha.cornell.edu/chrpubs/255/>
- Swift, P.E., & Hwang, A. (2013). The impact of affective and cognitive trust on knowledge sharing and organizational learning. *The Learning Organization*, 20(1), 20-37. <https://doi.org/10.1108/09696471311288500>
- Tabachnick, B.G., & Fidell, L.S. (2013). *Using Multivariate Statistics* (6th ed.). Boston, MA: Pearson/Allyn & Bacon.
- Takhsha, M., Barahimi, N., Adelpanah, A., & Salehzadeh, R. (2020). The effect of workplace ostracism on knowledge sharing: the mediating role of organization-based self-esteem and organizational silence. *Journal of Workplace Learning*, 32(6), 417–435. <https://doi.org/10.1108/jwl-07-2019-0088>
- Tang, F., Mu, J., & MacLachlan, D. L. (2010). Disseminative capacity, organizational structure and knowledge transfer. *Expert Systems with Applications*, 37(2), 1586-1593. <https://doi.org/10.1016/j.eswa.2009.06.039>
- Tang, J., & Martins, J. T. (2021). Intergenerational workplace knowledge sharing: challenges and new directions. *Journal of Documentation*, 77(3), 722-742. <https://doi.org/10.1108/JD-08-2020-0129>
- Tarafdar, M., & Qrunfleh, S. (2009). IT-business alignment: A two-level analysis. *Information Systems Management*, 26(4), 338–349. <https://doi.org/10.1080/10580530903245705>

- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533. Retrieved from <http://www.jstor.org/stable/3088148>
- Tiller, S. R. (2012). Organizational structure and management systems. *Leadership and Management in Engineering*, 12(1), 20–23.
[https://doi.org/10.1061/\(asce\)lm.1943-5630.0000160](https://doi.org/10.1061/(asce)lm.1943-5630.0000160)
- Tornjanski, V., Petrovic, D., & Nestic, S. (2020). Effectiveness of knowledge transfer between project team members in digitally disrupted organizations. *Management: Journal of Sustainable Business and Management Solutions in Emerging Economies*, 25(2), 1-13. <https://doi.org/10.7595/management.fon.2018.0034>
- Turulja, L., & Bajgorić, N. (2016). Innovation and information technology capability as antecedents of firms' success. *Interdisciplinary Description of Complex Systems: INDECS*, 14(2), 148-156. <https://doi.org/10.7906/indecs.14.2.4>
- Tyssen, A. K., Wald, A., & Spieth, P. (2014). The challenge of transactional and transformational leadership in projects. *International Journal of Project Management*, 32(3), 365–375. <https://doi.org/10.1016/j.ijproman.2013.05.010>
- United States Small Business Association. (2019). Table of size standards.
https://www.sba.gov/sites/default/files/2019-08/SBA%20Table%20of%20Size%20Standards_Effective%20Aug%2019%2C%202019_Rev.pdf
- Unsworth, K., Sawang, S., Murray, J., Norman, P., & Sorbello, T. (2012). Understanding innovation adoption: Effects of orientation, pressure and control on adoption

intentions. *International Journal of Innovation Management*, 16(1), 1-35.

<https://doi.org/10.1142/S1363919611003593>

Uymaz, A.O. (2014). How is an employee's entrepreneurial side revealed or terminated by organizational factors. *International Journal of Business and Social Science*, 5(3), 229-234. http://ijbssnet.com/journals/Vol_5_No_3_March_2014/28.pdf

Van den Heuvel, S., Schalk, R., & van Assen, M. A. L. M. (2015). Does a well-informed employee have a more positive attitude toward change? The mediating role of psychological contract fulfillment, trust, and perceived need for change. *The Journal of Applied Behavioral Science*, 51(3), 401-422.

<https://doi.org/10.1177/0021886315569507>

Van der Voet, J. (2014). The effectiveness and specificity of change management in a public organization: Transformational leadership and a bureaucratic organizational structure. *European Management Journal*, 32(3), 373-382.

<https://doi.org/10.1016/j.emj.2013.10.001>

Vaccaro, I.G., Jansen, J.J., Van Den Bosch, F.A., & Volberda, H.W. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies*, 49(1), 28-51. [https://doi.org/10.1111/j.1467-](https://doi.org/10.1111/j.1467-6486.2010.00976.x)

[6486.2010.00976.x](https://doi.org/10.1111/j.1467-6486.2010.00976.x)

Verdu, A.J., Tamayo, I., & Ruiz-Moreno, A. (2012). The moderating effect of environmental uncertainty on the relationship between real options and technological innovation in high-tech firms. *Technovation*, 32(9), 579-590.

<https://doi.org/10.1016/j.technovation.2012.06.001>

- Vij, S., & Farooq, R. (2016). Moderating effect of firm size on the relationship between IT orientation and business performance. *The IUP Journal of Knowledge Management, 14*(4), 34-52.
https://www.iupindia.in/1610/Knowledge%20Management/Moderating_Effect.html
- Vogt, W. P. (2007). *Quantitative Research Methods for Professionals*. Boston, Massachusetts: Allyn & Bacon.
- Wahba, M. (2015). The impact of organizational structure on knowledge management processes in Egyptian context. *The Journal of Developing Areas, 49*(3), 275-292.
<https://doi.org/10.1353/jda.2015.0173>
- Wang, D., Su, Z., & Yang, D. (2011). Organizational culture and knowledge creation capability. *Journal of Knowledge Management, 15*(3), 363-373.
<https://doi.org/10.1108/13673271111137385>
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review, 20*(2), 115-131.
<https://doi.org/10.1016/j.hrmr.2009.10.001>
- Warner, R. M. (2013). *Applied Statistics* (2nd ed.). Thousand Oaks, California: Sage Publications.
- Wernerfelt, B. (1984). The resource-based view of the firm. *Strategic Management Journal, 5*(2), 171-180. Retrieved from <http://www.jstor.org/stable/2486175>

- Wernerfelt, B. (1995). The resource-based view of the firm: Ten years after. *Strategic Management Journal*, 16(3), 171-174. <http://links.jstor.org/sici?sici=0143-2095%28199503%2916%3A3%3C171%3ATRVOVF%3E2.0.CO%3B2-%23>
- Westover, J. H. (2010). Managing organizational change: Change agent strategies and techniques to successfully managing the dynamics of stability and change in organizations. *International Journal of Management and Innovation*, 2(1), 45-51. <https://link.gale.com/apps/doc/A270375479/AONE?u=anon~cc739288&sid=googleScholar&xid=4ea06d3e>
- Wiengarten, F., Humphreys, P., Cao, G., & McHugh, M. (2013). Exploring the important role of organizational factors in IT business value: Taking a contingency perspective on the resource-based view. *International Journal of Management Reviews*, 15(1), 30-46. <https://doi.org/10.1111/j.1468-2370.2012.00332.x>
- Wu, S., & Lin, C. (2011). The influence of innovation strategy and organizational innovation on innovation quality and performance. *International Journal of Organizational Innovation*, 3(4), 45-81. <http://www.ijoi-online.org/index.php/back-issues/26-volume-3-number-4-spring-2011>
- Yiu, H. L., Ngai, E. W., & Lei, C. F. (2020). Impact of service-dominant orientation on the innovation performance of technology firms: Roles of knowledge sharing and relationship learning. *Decision Sciences*, 51(3), 620-654. <https://doi.org/10.1111/dec.12408>

- Yoon, C. Y. (2016). Measurement of firm IT capability to efficiently perform business tasks in an IT environment. *International Journal of Information and Education Technology*, 6(4), 280-285. <https://doi.org/10.7763/IJiet.2016.V6.700>
- Zaridis, A. D., & Mousiolis, D. T. (2014). Entrepreneurship and SME's organizational structure. Elements of a successful business. *Procedia-Social and Behavioral Sciences*, 148, 463-467. <https://doi.org/10.1016/j.sbspro.2014.07.066>
- Zheng, W., Yang, B., & McLean, G. N. (2013). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*, 63(7), 763-771. <https://doi.org/10.1016/j.jbusres.2013.06.005>

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Appendix B: Research Instrument Constructs and Items

Information Acquisition (IA)

IA1. The employees are informed of how the firm was created and its philosophy of work.

IA2. We collect and use the information generated during organizational changes.

IA3. Employees' interaction and participation to gather information about possible changes are encouraged.

IA4. We constantly evaluate the need to adapt to the business environment.

IA5. The members of the organization use informal means to find out about the most recent events regarding the market or the environment.

IA6. As a result of the knowledge acquired in the course of time the employees are more efficient in exercising their responsibilities.

IA7. We collect information about what our competitors do through different means.

IA8. When we do not have the specific knowledge required, we look for it and acquire it outside the organization.

IA9. We periodically check whether our strategy is aligned with the business environment.

IA10. Problems are approached proactively, that is, we learn from other entities to be able to respond to these problems before they arise.

IA11. We use formal and reiterative procedures to evaluate our results and compare them with those of the competition.

Knowledge dissemination (KD)

KD1. We have a meeting schedule among departments to integrate the existing information.

KD2. We devote some time to discussions about the organization's future needs.

KD3. We use databases and organizational files to support our work.

KD4. The company's general objectives are communicated throughout the organization.

KD5. We are really interested in providing employees with an overall view of the company's operations, even with personnel turnover.

KD6. There are people responsible for collecting the proposals made by the staff and for distributing them internally.

KD7. Vital information is transmitted quickly to all employees.

Shared interpretation (SI)

SI1. We systematically examine and update our opinion about the business environment.

SI2. We try to develop an interpretation as uniform as possible of relevant information.

SI3. The employees have at their disposal a wide variety of communication tools (telephone, e-mail, fax, intranet, etc.).

SI4. We generate concise reports intended to avoid excess information that may limit our capacity to interpret it adequately.

SI5. Before a decision is taken the different alternatives are thoroughly analyzed.

SI6. We review relevant information periodically in case it is obsolete or may lead to error.

SI7. We do not oppose changes in the way of doing things.

Organizational memory (OM)

OM1. We have our own expert personnel in the most essential aspects of the organizational operations.

OM2. Personnel turnover does not risk our capacity to create new knowledge and solve problems.

OM3. We carry out training programs (for example: workshops, seminars, etc.) for the members of the organization.

OM4. We are aware of who has the specific abilities and the experience to intervene when an opportunity or problem arises.

OM5. Key employees when the organization faces a new opportunity or problem can be conveniently contacted.

OM6. People in the organization who are helpful when an opportunity or problem arise are actively committed to looking for possible solutions.

OM7. There is an atmosphere of trust and collaboration among the personnel of the company to cooperate when opportunities or problems arise.

Strategic Flexibility Scale

FLEX1. Entry of new competitors

FLEX2. Change of customers' product/service preferences.

FLEX3. Radical technological changes or the anticipated obsolescence of current technologies.

FLEX4. Important economic changes.

FLEX5. Detection of new business threats.

FLEX6. Detection of new business opportunities.

Note: The items in *italics* were dropped from the instrument in the original study.