

**OUTCOMES OF DYNAMIC CAPABILITIES: USAGE
IN THE PROCUREMENT SECTION OF THE SUPPLY CHAIN**

by

Dorraine Cooper-Rooney

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

Keiser University

March 14, 2018

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July 2018

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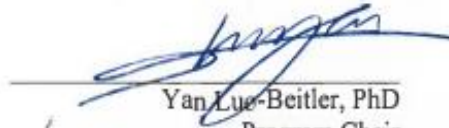


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Abstract

Leaders of companies operating in the supply chain have faced enormous competition, thereby needing to develop alternatives for a competitive advantage within and outside the organization. In the field, researchers have suggested that one's dynamic capabilities may determine one's determining competitiveness. The dissertation is an applied research study of the existing dynamic capabilities in the supply chain of organizations to verify the models used and the changes that it brings to the supply chain. The theoretical framework covered the foundations of this study. To collect research data, the researcher shall use surveys to collect data. Quantitative analysis approach will be used to draw inferences to help in this new research. The position of this dissertation is that dynamic capabilities, employed in the procurement section of the supply chain, have a direct influence on the overall performance of an organization. The study revealed that the dynamic capabilities of supply base alignment, performance improvement, operational performance, supply side competence, and systems orientation was critical to organizational performance. Although individual capabilities held minimal sway, when the individuals combined to form the dynamic capability, the influence had the most power over organizational performance. The supply side and operational performance were both organizational competences, while performance improvement, supply base alignment, and systems orientation were managerial competences. This literature added to work in supply chain and procurement; it has shown successfully that dynamic capabilities used in the procurement section did have direct effect on organizational performance.

Dedication

I wish to dedicate this research to my husband, Walter Rooney; My father, Paul Cooper; Chris Bilton; Alex Hulbert; my grandson, Wilhelm Webley; Dr. Scott; Kim Mosley; Dr. Casanas; Dr. Choudhry; Dr. Eggertsson; Dr. Boris; and Dr. Sals-Amaro, each of whom pushed me into being the best and reaching for my dreams.

Acknowledgments

I wish to acknowledge APICS for classes and access to their member body to aid in my understanding of supply chain.

Table of Contents

Acknowledgments	iv
List of Tables	viii
List of Figures	Error! Bookmark not defined.
CHAPTER 1. INTRODUCTION	1
Introduction to the Problem	1
Problem Statement	2
Background of the Study	3
Research Aims and Objectives	6
Research Questions and Hypotheses	7
Theoretical Framework for the Study	8
Nature of the Study	10
Definitions	10
Assumptions	15
Scope and Delimitations	15
Limitations	16
Significance	17
Summary	18
CHAPTER 2. LITERATURE REVIEW	20
Introduction	20
Literature Search Strategy	22
Theoretical Foundation	23
Conceptual Framework	26
Key Variables and or Concepts	30

Summary	35
CHAPTER 3. METHODOLOGY	37
Introduction	37
Research Design	37
Population	38
Instrumentation	38
Data Collection	39
Summary	40
CHAPTER 4. RESULTS	42
Introduction	42
Research Overview	42
Data Presentation	42
Research Question	43
Research Methodology	43
Data Collection/Rate of Response	44
Data Analysis	44
Significance, Population, and Sample	45
Results of Study	45
Discussion	64
Summary	65
CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS	66
Introduction	66
Summary of the Findings	66
Significance of the Implications	69
Limitations	71

Recommendations	71
Conclusion	71
REFERENCES	73
APPENDIX. THE SURVEY	90

List of Tables

Table 1. Supply Side Competence Combined Total	47
Table 2. Demand Side Competence Combined Total	49
Table 3. Process Compliance Combined Total	51
Table 4. Internal Stakeholder Alignment Combined Total	56
Table 5. Supply Base Alignment Combined Total	61

CHAPTER 1. INTRODUCTION

Introduction to the Problem

Global supply chain has become an important concept in the business world. With the rising levels of economic globalization, business enterprises face strong competition in both local and international environments (Owusu-Nyamekye & Eggertsson, 2014). Technological innovation has hastened the competitive business environment presenting many dynamics in the field of global supply chain (Teece, 2014). The coordination in the area of the supply chain management has become a subject of research. A key participant in organizational strategy and competitive advantage in any global business is a responsive supply chain (Roh, Hong, & Min, 2014). Economic upheaval happening in different regions around the world requires the ability to work a responsive and effective supply chain on a multinational level this is imperative to risk reduction for any organization (Christopher & Lee, 2004). Owusu-Nyamekye and Eggertsson (2014) showed such responsive environments lead to expeditious organizational recovery from disaster. According to Teece (2014), the ability to purchase or move production or distribution routes to any point across the globe, all starts in the procurement section of the global supply chain.

The ability for an organization to diversify within procurement aids an organization to gain opportunities and a reduction in risk (Teece, 2014). As per Teece and Pisano (1994), effective implementation of dynamic capabilities can allow any organization to develop, adapt, and grow. Use of dynamic capabilities in the procurement section of the global supply chain would allow for a more flexible, cost effective and

increased innovations across the organization and or global supply chain respectively (Rai, Patnayakuni & Seth, 2006). This would allow for the development of better organizational strategies and policies (Pitelis & Teece, 2016).

The process of coordinating a supply chain involves integrating operational capabilities, which can be a type of dynamic capability, per Teece and Pisano (1994). To understand the supply chain coordination, one must have a dynamic capabilities framework. It is this researcher's position that dynamic capabilities used in the procurement section of the supply chain have a direct effect on overall organizational performance. With use of a dual survey instrument, I intended to gain an understanding from both managerial and organization perspectives, as suggested by researchers (Blome, Schoenherr, & Rexhausen, 2013; Handfield, Cousins, Lawson, & Petersen, 2015). Factors, such as demand side competence, stakeholder alignment, and system process, were observed and reported to add to research of dynamic capabilities, procurement, supply chain management, and organizational management.

Problem Statement

How the role of procurement functions in the sustainable global supply chain can translate into better organizational performance (Roh et al., 2014). One can use dynamic capabilities in procurement to gain resource allocations to add to policy and dynamic learning in the organization, according to Luo (2001). Understanding the inner and intra workings of dynamic capabilities used in procurement can add to the organizations bottom line (Luzzini, Brandon-Jones, Brandon-Jones, & Spina, 2015). The upstream section refers to the procurement section of the global supply chain, according to Luzzini et al. (2015).

According to Roh et al. (2014), one of the biggest problems that many global organization leaders face is creating a responsive and flexible supply chain. Luzzini et al. (2015) stated that dynamic capabilities in purchasing and global supply chains represented an under-explored area. Roberta Pereira, Christopher, and Lago Da Silva (2014) considered the supply chain resilience formed by the procurement section in an exploratory study. The researchers found that the procurement section was of great importance; additionally, they added that vastly more research was needed.

The critical success of a global business rests on the ability to deploy and upgrade critical capabilities, as per Luo (2001). Miemczyk, Johnsen, and Macquet (2012) stated that much research focused on procurement or the supply chain alone but not on how the procurement section influenced the overall performance of the organization. The problem is a lack of research in cause and effect of dynamic capabilities being used in procurement and the overall effect that would have on organizational performance. This gap in research (how the use of dynamic capabilities in the procurement section of the global supply chain influence overall organizational performance) was the primary problem of this study.

Background of the Study

Global procurement comes with new risks and opportunities. Risks and opportunities require active management throughout the organization to retain competitive advantage (Reuter, Foerstl, Hartmann, & Blome, 2010). Albright and Davis (1999) gave structure to the supply chain and “procurements” place in it. Procurement is more than just purchasing or logistics in the supply chain; it entails all upstream actions (Rai, Patnayakuni, & Seth, 2006). Winter (2003) stated that a “zero capabilities” usage in

an organization could make that organization live in the present. An organization that uses dynamic capabilities can have a chance to extend, modify, or create ordinary capabilities, thereby allowing the organization to gain success and growth. Most organization leaders seek to acquire and retain this aptitude. The global marketplace now has increasing expectations of speed, value, and quality that are creating bigger demands on procurement (Billington & Davidson, 2013).

Researchers have posited that one should produce better overall organizational performance when using dynamic capabilities in procurement (Pitelis & Teece, 2016). After a global SWOT analysis of Domino's Pizza with 9000 stores in 60 countries, Syed (2016) went into detail about the importance of global supply chain procurement to the end price and quality of the final product served. Schoenherr and Speier-Pero (2015) stated the importance of pedagogic knowledge in the different areas of the global supply chain and the value it brought to all academia.

According to work by Daniel and Rajendran (2005), when considering competence, such as "inventory" (single level, low efficiency, and lack of relationships) and the dynamic competence of "inventory optimization" (multitiered, high efficiency, and relationships with strong foundations), one gains a scope of the problem. Organization leaders can use this process to not only reduce costs, improve output, and improve throughput, but also to build ties in the differing areas of the business, thus giving the organization stronger footholds at every level. An example can be seen in Ashley Furniture, which has been enjoying the success of implementing inventory optimization globally (Selle, 2013). Because such dynamic competences are relatively innovations and carry implementation times of up to 10 years, many numbers are not

available—Ashley is currently in its third year of a 7-year program (J. Benedict, Personal Communication, May 16, 2017).

The ever-rising levels of competition contribute to an organization's need to invest in new dynamic capabilities to remain a top performing entity in the business world. Global companies can become more risk resistant, retain greater shareholder value, and can become more financially sound when implementing dynamic capabilities as part of procurement protocol (Pitelis & Teece, 2016). There is a need for sound measurement of progress in procurement; it will give a framework for future researchers to develop (Rai, Patnayakuni, & Seth, 2006). According to Selle (2013), one could also build this framework into an organization's overall strategy. I considered building such a framework to provide usable data for analysis.

Purpose of the Study

Data on agility, operational performance, stakeholder alignment, and systems orientation provided the data to answer my current research question. One used research through a global source, such as APICS, to develop a view across industries and countries. Several authors have used two very different concepts in a survey to gain perspective on knowledge transfer between supply chain actors (He, Ghobadian, & Gallear, 2013).

A great deal of academic research in the areas of dynamic capabilities, global supply chain performance and procurement management, with specific focus in the operations of such capabilities in the procurement section, shows that this research is warranted. This will not only allow for new data to be generated, but give a measurement in time from data collected in both prior studies (Du, Lai, Cheung, & Cui, 2012). Selle

(2013) demonstrated a need for future research of market forces, tactics, and strategies in procurement that have influences on the global supply chain. Spring and Araujo (2014) stated indirect capabilities had direct effects on organizational performance.

I examined supply chain managers of organizations' use of dynamic capabilities in the procurement section of the supply chain on overall organizational performance. Use of a combined study gave both an organizational and managerial perspective to the work, which added validity and a well-rounded view to the research (Blome et al., 2013; Handfield et al., 2015). This study produced a measurement in time and progress from the last disbursement of both prior instruments.

Research Aims and Objectives

The aim of this study was to analyze how dynamic capabilities could influence the supply chain of an organization, the variables that influence the supply chain environment, and the overall organizational competence. To achieve this aim, the study was based on the following research objectives:

1. Analyze existing dynamic capabilities used in the procurement sections of supply chains of leading organizations and managers respectively.
2. Examine the effects of implementation of Dynamic Capabilities: Usage in the Procurement Section of the Global Supply Chain.

To fulfill the above objectives, global professionals were asked questions that were answered on a 7-point Likert scale. Thereafter, quantitative representation-built data to analyze using Statistical Package for the Social Sciences (SPSS) software.

Drnevich and Kriauciunas (2011) stated that in strategy, capabilities could influence organizational performance in a variety of ways, and those heterogeneous

capabilities arguments are lacking in proper research. This line of thinking goes against findings by Oh, Ryu, and Yang (2016). Oh et al. considered information and communication technology; they stated there was only moderate influence in dynamic capabilities and organizational performance. This finding represented a reason to explore implementation and analyze how organization leaders have used dynamic capabilities in the procurement section of the global supply chain.

Research Questions and Hypotheses

I framed the research question as follows: How do dynamic capabilities used in the procurement section of the global supply chain affect the performance of the overall organization? Based on this question, the following hypotheses were developed.

H_{1o}: The use of dynamic capabilities in the procurement section of the global supply chain is not critical for any global organization to achieve and maintain competitive advantage in the global marketplace.

H_{1a}: The use of dynamic capabilities in the procurement section of the global supply chain is critical for any global organization to achieve and maintain competitive advantage in the global marketplace.

The independent variables included supply side and demand side competence, process compliance, supply chain agility, operational performance, stakeholder alignment, systems orientation, supply alignment, performance improvement, and supply agility. The dependent variables included organizational performance on the supply chain (procurement, production, and distribution). The instrument consisted of two surveys used before. Because the instrument has been used before, it answered the question of the instrument's validity (Blome et al., 2013; Handfield et al., 2015).

This research project followed the scientific method of research, namely hypothesis creation, experimentation, and hypothesis resolution (Ketokivi & Choi, 2014). Using a dual instrument also answered the ancillary question of how far the answers to both instruments in dynamic capabilities have come in the last few years. This investigation set an added standard of measure for future researchers, according to Makkonen, Pohjola, Olkkonen, and Koponen (2014). Makkonen et al. created a similar type of instrument during their study. Their instrument was composed of a prior-used qualitative survey and quantitative survey, giving them the ability to construct a “novel measuring scale” (Makkonen et al., 2014, p. 20).

Theoretical Framework for the Study

Thünen (1826) conceived the location theory or macroeconomic theory, which I used as the foundation of this study based on organizational location activities. Ansoff (1957) defined the concept of organizational diversification strategy as built on throughout the study by applying it to a country and industry. The work reflected in this dissertation was predicated to the growth of a firm on many levels. Seminal research began with Penrose (1959) and his theory of growth in the firm. Koontz (1961) stated operations management theory also referred to the building supply chain theory. Porter's (1981) five forces and competitive advantage were used as descriptive measures for the reader (Caves & Porter, 1977). Wernerfelt's (1984) concept of resourced based view can be viewed as seminal to this study because it is used to study everything, both tangible and intangible, in the organization.

Hickson, Hinings, Lee, Schneck, and Pennings (1971) defined contingency theory as relating to supply chain theory. Houlihan (1985) produced work that showed supply

chain management was part of operations management, and each had a direct influence on the other. This is a concept followed throughout the business environment to this day. Spekman and Hill (1980) developed the supply chain procurement theory and stated the theory should be further developed and brought into the current era. Consideration is given to Powell's (1995) theory of total quality management, as it related to procurement. In a once futuristic dream, the concept of E-procurement was developed from Stewart (1965) and was later academically motivated by Puschmann and Alt (2005).

I used the dynamic capabilities theory, as formed by Teece and Pisano (1994), as the foundation for this investigation (see Chart A for development of theory). Path dependency theory was explored both during this inquiry and during the comparison with past results between the current and past instruments (Sarkis, Zhu, & Lai, 2011). Most of the framework for dynamic capabilities was built by Teece and Pisano (1994) on economic concepts of Sraffa, who was influenced by Ricardo, while attempting to perfect value theory.

According to Chen and Paulraj (2004), the research on supply chain management and strategy is scattered and disjointed. Procurement theory is focused on obtaining goods and or services and the processes required to meet the needs of the organization according (Andersson & Norrman, 2002). This study furthered not only professional theory, but also academic theory by adding to the structured framework of research in dynamic capabilities and supply chain with a focus in procurement. With a measurement in time created, it opened the field for future studies using these theories, as reuse of the instrument at a later stage can show trends in dynamic capabilities, supply chain management and procurement (Banker, Bardhan, Chang, & Lin, 2006).

Nature of the Study

The research was quantitative in nature. The function of the quantitative research provided a means of verifying the hypotheses and a means of presenting the generalized results to enrich learning on professional and pedagogic levels. The instrument named *dynamic performance* was implemented through the Association for Supply Chain Management (APICS) supply channel and closed in 35 days. A 7-point Likert scale rendered quantitative results by considering data obtained from global supply chain workers.

A request was made for respondents to click the link on the invitation post. The instrument was filled out online using SurveyMonkey. SurveyMonkey will retain records for 1 year, and then all records will be deleted. I did not deal directly with the participants, which added validity, according to Randall and Gibson (1990).

The data were correlated from the respondents as a convenient sample using SPSS software. This process follows a precedent of dynamics measurement, much like what Schilke (2014) used, where longitudinal data on dynamic capabilities were analyzed. This process involved one averaging each of the seven items for each construct. From these answers, I completed my findings for this study.

Definitions

The respective fields of global supply chain management, procurement, procurement management, and dynamic capabilities all use several definitions for the same terms (Ahi & Searcy, 2015). To understand the research, the researcher and reader must be of the same understanding (Westlund & Stuart, 2017). The following terms and concepts are used in this paper.

Competitive advantage. Competitive advantage refers to a condition or circumstance that puts an organization in superior or favorable business position (Porter, 1985).

Contingency theory. Contingency theory refers to optimal organization actions dependent on the organizational current interior and exterior situation (Hickson et al., 1971).

Demand side competence. Demand side competence focuses on production downstream from the organization to the consumer to explain managerial choices that work to increase value creation (Priem & Swink, 2012).

Disruptions. Disruptions refer to issues arising on the supply chain (Ambulkar, Blackhurst, & Grawe, 2015). According to Hendricks and Singhal (2005), such issues can cause a drop-in stock price that can last for up to a year after a disruption, increasing equity risk.

Distribution. Distribution refers to the action or process of getting products from the organization to the market or consumer (Siddhartha & Sachan, 2016).

Dynamic capability theory. Dynamic capability theory is based on organizational theory, which refers to the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece, Pisano, & Shuen, 1997).

E-procurement. E-procurement is one using the Internet (both internal and external of the organization) to streamline the needs of the supply chain (Puschmann & Alt, 2005).

Flexibility. Flexibility refers to the ability of the supply chain to cope with disruptions (Aaker & Mascarenhas, 1984). Stevenson and Spring (2007) noted that prior definitions of flexibility were limited and defined it as a reactive means to cope with uncertainty.

Goal theory. Goal theory is goals in learning, which are a motivational influence tool (House, 1971).

Green purchasing. Green purchasing refers to the procurement of goods or services that have a reduced risk on the environment and the processes that make it happen (Diabat, Khodaverdi, & Olfat, 2013).

Key participant. Key participant is an actor in a responsive supply chain (Roh et al., 2014). The top tier mover in any supply chain can control the pace or move sections of the supply chain (Stock & Boyer, 2009).

Operational performance. Operational performance refers to one aligning organizational divisions within a business to focus on getting core business goals met (Kenyon, Meixell, & Westfall, 2016).

Operations management theory. Operations management theory refers to one implementing practices to create a high level of efficiency and allow for greater profit of an organization (Hofer, 1975).

Organizational performance. Organizational performance is the complete output of an organization measured against the intended output (Dess & Robinson, 1984).

Path dependency theory. Path dependency theory is considered to be when the decision-makers make choices result in an increasing return (Sarkis et al., 2011).

Performance improvement. Performance improvement refers to one measuring organizational output in a business or unit of that business of a process or protocol and adjusting said process or protocol to obtain desired goals or objectives (Real, Roldán, & Leal, 2014).

Process compliance. Process compliance consists of the protocol for becoming in accord with guidelines and regulations or all efforts to do so in both industry and government standard (Wijen, 2014).

Procurement. Procurement refers to one obtaining goods and or services and the processes thereof required by an organization to meet the needs of the organization (Andersson & Norrman, 2002).

Production. Production is the action of taking raw materials or components to product status, the process of manufacture (Boons, Montalvo, Quist, & Wagner, 2013).

Resourced based view theory. Resourced based view theory consists of a deeply analytical view of sources and methods of organizational wealth creation and capture (Wernerfelt, 1984).

Stakeholder alignment. Stakeholder alignment is the ability of procurement to define the organizations internal needs, while accountability brings procurement to the status of trusted advisor (Handfield et al., 2015).

Supply alignment agility. Supply alignment agility is the action of supply chain management working together to maneuver the supply chain to the best interest of key participant(s) in that chain (Handfield et al., 2015).

Supply chain. Supply chain refers to the concept of seeing each business as a link in a created value chain (Priem & Swink, 2012).

Supply chain agility. Supply chain agility is the action of motion in a supply chain for better quality or price or to avoid conflict (war, natural disaster, etc.) in said chain (Handfield et al., 2015).

Supply chain coordination. Supply chain coordination is a way to improve supply chain performance by aligning plans and objectives between organizations or departments (Eltantawy, Paulraj, Giunipero, Naslund, & Thute, 2015).

Supply chain management. Supply chain management refers to part of operations management that entails strategy, marketing, production, distribution, and service; in essence, this is the flow of a product from procurement to consumer (Houlihan, 1985).

Supply side competence. Supply side competence refers to the ability to create economic growth by lowering barriers on production of goods and services, key participant in agility and competitive advantage (Blome et al., 2013).

Systems orientation. Systems orientation refers to interpretation and implementation of systems thinking, as well as the ability to design and consider the complexity of various systems in the supply chain or organization (Reim, Parida, & Örtqvist, 2015).

Task management theory. Task management theory refers to scientific applications applied to ordinary management, also known as scientific management theory (Taylor, 1914).

Upstream section. Upstream section is the procurement section of the global supply chain (Luzzini et al., 2015). Part of the supply chain prior to production can include planning, strategy, order intake, and purchasing (Vachon & Klassen, 2006).

Assumptions

Davies, Dodgson, and Gann (2016) argued there was a theoretical assumption that dynamic capabilities were restricted to conditions found in multi-project organizations. According to Teece (2016), Baumol noted that the assumptions of mainstream economic theory used for entrepreneurs, managers, and leaders were a core element of dynamic capabilities. McAdam, Humphreys, Galbraith, and Miller (2017) posed the assumption that dynamic capabilities in the supply chain enhanced pedagogic worth in goal theory. One can use the dynamic capability theory to complement and integrate international management and international business perspectives (Teece, 2014). I integrated these assumptions and focused on dynamic capabilities used as a core element to integrate units or departments of an organization. Research through APICS did not restrict conditions of organizational size or project capability.

Scope and Delimitations

Teece and Pisano (1994) formed the dynamic capabilities theory to lend focus to the competencies of an organization. Supply, demand, process compliance, and supply chain agility are but a few of the competencies from Blome et al. (2013) that generated an organizational perspective. Competencies, such as internal stakeholder alignment, systems orientation, and supplier agility, garnered a managerial perspective (Handfield et al., 2015). Through combined perspectives and past survey data, a representation of dynamic capabilities usage in the procurement section of the supply chain began to appear for observation and progress over time. In the broadest sense, I also contributed to work of organizational behavior, as studied based on both the managerial and organizational value (Dess & Robinson, 1984). Weldy and Icenogle (1997) defined the

value of managerial perspective as a trait to higher outputs and job satisfaction. Turban and Greening (1997) stated that any company could benefit from self-assessment, and the researchers stressed the importance of gaining organizational perspective. In later work, Scupola (2003) noted the saliency of gaining supply and demand side competencies from organizational perspective. Hollen, Van Den Bosch, and Volberda (2013) focused on supply chain managers and personnel only, which gave the study a large perspective in a narrow view. Researchers have used dynamic performance to investigate global supply chain professionals and consider dynamic capabilities used in procurement regarding organizational performance. The instrument for this study was open to managers all around the world via the Supply Channel. I worked to gain perspectives on areas and industries, as well as competencies.

Limitations

Chen et al. (2016) showed that values, such as strategic resources and communication, played a vital role so that dynamic capabilities would not be the only factor to determine organizational performance. Li, Chen, Liu, and Peng (2014) stated that in focused studies, such as this, one could consider the research content specific, which should be viewed with careful thought. Hollen et al. (2013) noted further limitations and stated that supply chain managers and personnel had a very narrow focus, and future research could add in influencer groups. Teece (2017) also pointed out that dynamic capabilities were part of a multidisciplinary framework, and future productive dialogue among academics of different backgrounds could aid in creating a theory of relevance. This research did not contain any influencer groups, and I focused on one

strategy in procurement, specifically making levels of performance. I did not consider communication or other role players involved in organizational performance.

Significance

Researchers have posited the inter-relationship between dynamic capabilities used in the procurement section of the supply chain and the value creation may influence the overall supply chain of several organizations across countries and industries. Researchers have observed and reported such relationships (Pitelis & Teece, 2016). According to Manuj and Mentzer (2008), a positive result in research could add to reducing risk and better overall use of any global supply chain for organizational competitive advantage. The negative result would influence the global supply chain and procurement managements, creating a need for further and deeper studies. I not only furthered current research, but this study also became a tool for measurement in time from past and for future research.

Christopher and Peck (2004) showed that research, such as dynamic performance studies, would push boundaries and open new ideas in supply chain resilience. Researchers with salient information of the global supply can set strong policy and add to organizational competitive advantage. Reuter et al. (2010) showed that this research could move the study of buyer and supplier management to a new height by observing areas and supplying new data on supplier agility, supply base alignment, and operational performance.

The target market for this study would be organizations, such as Ashley Furniture, Exxon, Amazon, and McDonald's, which would want to grow, innovate, and become more sustainable (Pitelis & Teece, 2016). In an educational venue, it could add to past

research in strategy and management, along with producing a tool for measurement (Du et al., 2012). The focus of this research was not to reinvent the wheel but simply to chart its course through time. Bamburry (2015) stated that ancillary to a bigger bottom line, a good structure with dynamic competence in the supply chain could heighten innovation. Observing dynamic capability can be followed across the globe in organizations, such as Google, Amazon, and UPS, and this research could push for more efficiency. The study results could also add to strategy development and management skills.

Summary

Proper use of a global supply chain can further any global organization and improper use can cause a global company to work below its potential, according to work by Manuj and Mentzer (2008). According to Teece (2014), the ability to purchase or move production or distribution routes to any point across the globe, starts in the procurement section of the global supply chain. The marketplace now has increasing expectations of cost, speed, innovation, and satisfaction creating demands for procurement efficiency (Billington & Davidson, 2013).

The coordination and technological innovation can help an effective supply chain on a multinational level in risk reduction (Owusu-Nyamekye & Eggertsson, 2014). The problem that is of note shows dynamic capabilities in procurement and global supply chains is an under-explored area (Luzzini et al., 2015). According to Pitelis and Teece (2016), the background of dynamic capabilities in procurement should produce better overall organizational performance. The purpose of this study was to create new research on dynamic capabilities in procurement using a dual survey instrument and create an academic measure in time (Blome et al., 2013; Handfield et al., 2015). I hypothesized

that use of dynamic capabilities in the procurement section of the global supply chain was important for any global organization to achieve and maintain competitive advantage.

More research is needed in the interactive relationship of procurement's use of dynamic capabilities in the supply chain on the performance of the organization (Luzzini et al., 2015). Use of a closed-ended, quantitative study implemented through APICS (during 2017) garnered both organizational and managerial views. This research could add to the academic literature of supply chain management, as well as procurement management and dynamic capabilities theory.

Stemming from location theory or macroeconomic theory conceived by Thünen (1826) and including path dependency theory, this subject touches on many theories (Sarkis et al., 2011). The quantitative research led to outcomes measurable through statistical software. Research through APICS did not restrict conditions or add subgroups.

As stated in this chapter, the scope of this research was that of global supply chain professionals and investigating dynamic capabilities used in procurement regarding organizational performance. Research such as this should be considered content specific and viewed with focused perspective (Li et al., 2014). The study's view of inter-relationship between dynamic capabilities used in the procurement section of the supply chain and how it relates to value creation in the organization was of great significance both academically and professionally. The next chapter focuses on the literature that focused the intent of the requested research for this study.

CHAPTER 2. LITERATURE REVIEW

Introduction

Understanding dynamic capabilities usage in the procurement section of any link in a global supply chain is critical for an organization to achieve and maintain competitive advantage in the global marketplace (Luzzini et al., 2015). According to Hitt, Carnes, and Xu (2016) operations management constitutes the start of the process. The term operations management in the organization references the administration of business practices by an organization to gain optimum efficiency in the supply chain, as per Ellram and Cooper (2014). The value of understanding supply chain management is salient for global companies like Toyota, Wal-Mart, and Ikea. Spekman, Kamauff, and Myhr (1998) contemplated the dynamics of procurement and its interaction on the supply chain: How can what the organization wants or needs affect overall outcomes?

In some instances, per Croxton, Garcia-Dastugue, Lambert, and Rogers (2001), the supply chain can be used as a strategic weapon to obtain competitive advantage. Poor use of the supply chain can cause a company to lose money. Problems on the supply chain can cause a drop-in market value (Ketchen & Hult, 2007). Just a small drop in the market can cause problems on any supply chain that is not sustainably managed, according to Teece (2014).

The current business environment is competitive with every company coming up with new tactics and technologies to ensure that they remain top performers (Teece, 2014). As such, supply chain agility is a normal entity in almost all top performing business firms where there is a constant change in the supply chain strategies, as Thomé,

Scavarda, Pires, Ceryno, and Klingebiel (2014) mentioned in their study on the automotive industry. There is a line of supply chain and procurement thinking that shows whatever may disturb procurement can have direct effect on the competitive advantage held by the firm (Blome, Hollos, & Paulraj, 2014). Proper management in procurement is essential to the bottom-line in both the organization and the supply chain itself.

The dynamic capabilities of an organization paradigm have been a subject of much research for the last two decades, but its conceptual foundations have existed long before (see Chart A in the appendix for development of theory). The elements of a dynamic capabilities work on the premise of creativity and innovation based fundamental rules through a resource-based view analysis of an organization. To understand the topic better, a dynamic capability theory was also formed, in part, from organizational theory and defined by the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments for the benefit of the organization, as per Teece et al. (1997). I tested this strategy in a controlled environment to provide a marker of results.

Internal and external alliances, formed in procurement within an organization, aid in risk reduction for the organization (Eltantawy et al., 2015). The global company, system-wide value creation throughout the market, ecosystem creation, and co-creation, has been ignored, and use of dynamic capabilities in procurement could help explicate the nature of global enterprise and aid the knowledge based semi-global organization (Teece, 2007). Winter (2003) stated dynamic capabilities theory separated learning a skill from the skill itself. Procurement and supply chain management with dynamic capability theory created a framework that was established to show how dynamic capabilities,

working with different strategies in procurement, could create sustainable, superior organizational performance on the global supply chain and in the organization. This sustainable performance created by procurement's use of dynamic capability theory on the overall performance of the organization in a global supply chain, is what research needs to be done in this study.

Literature Search Strategy

The academic journey began by getting familiar with subject matter by searching through the Keiser University Library. Databases, such as Gale, EBSCO Host, and LIRN, held enriching papers from several academic papers (Annals of Operations Research, Administrative Science Quarterly, International Executive, etc.) and scholarly journals (*International Journal of Operations and Production Management*, *Journal of Supply Chain Management*, *Journal of Production Economics*, etc.). ProQuest held dissertations of other students that not only supplied pedagogic worth, but also showed how to align format and structure to the research. Kent's (2015) dissertation created the buyer supplier line of thinking. The opening thought was that of "what held focus in the supply chain" and "what would greatly affect it."

Exploration through google scholar brought seminal work by Thünen (1826) on location theory, and it was noteworthy that his basic construct remained applied to today. Porter's (1981) *Academy of Management Review* paper left one to ponder industrial organization and the value chain. Handfield and Bechtel's (2002) broke the supply chain into parts, such as procurement, production, and distribution. Procurement was the beginning, and everything it did was of lasting impact to the organization, according to Andersson and Norrman (2002).

The view became narrower as the ensuing subject came into focus, of procurement strategies and which would have an effect on performance. The Pasco County Library held older journals; this allowed for research in seminal work for better comprehension of procurement and dynamic capabilities. Teece and Pisano (1994) stated one should understand dynamic capabilities and its power to integrate the organization or on individual levels thereof. Cox (1996) noted procurement strategy should stand apart from that of the organization.

Venturing into the business world to search for the crediting agency for global supply chain, APICS was found. Here the opportunity presented itself for classes about the global supply chain and the ability to use the APICS database. More current and global work became available by *The Journal of Business Research* and *European Journal of Operational Research*, giving the research an in depth and rounded perspective.

Theoretical Foundation

Operations Management

Seminal work about organizational procurement included the location theory conceived by Thünen (1826). This theory was focused on what economic activities are located (when and where) best for the organization, as discussed by North (1955). Taylor (1914) brought about groupings by industry, company, and division, giving value to scientific management. Task management theory made way for operations management. Fayol (1916) built upon Taylor's (1914) theory, pushing for more efficient organizational management and behavior. Sutton (1920) continued discussion on how maritime logistics had become part of a supply chain theory. Robinson (1934) discussed the logic of

organization theory on an economic level. How to organize to gain efficiency and profit, with how to manage to gain required amounts of productivity were viewed on a professional level. While on a more academic level, organizational perspective was viewed in a more scientific manner.

Ansoff (1957) explained that organizational diversification (interior and exterior to the organization) was born out of the need for efficiency and stated that, if a company wanted to really promote growth and success, that the company had to change at double the speed of their competitors. Stevenson (1969) correlated analysis of resources and competitive advantage. Hickson et al. (1971) defined contingency theory as optimal organization actions being dependent on the organizational current interior and exterior situation.

Hofer's (1975) operations management theory refers to implementation of practices that create a high level of efficiency and allow for greater profit of an organization. Operations management theory was later shown with more focus on the supply chain between efficient versus responsive supply chains, as developed by Randall, Morgan, and Morton (2003), where the difference are between short (short productions and low set up costs) or long (longer production time and larger set up costs) orientation. Novack and Simco (1991) showed (with procurement theory) effective procurement directly influenced the competitive advantage.

Dynamic Capabilities

The dynamic capabilities theory considers acting or reacting in a timely manner, on multiple levels of the organization, and in unison. One cannot study dynamic capabilities without considering the theory of economic development, as laid out by

Schumpeter (1934). This set up a framework that Teece and Pisano (1994) would later build on. Unlike Arrow (1969), who saw organizations as quasi-markets, Teece and Pisano (1994) saw limits of making organizations into clusters of internal markets.

This dynamic theory was also partly formed from the seminal theory, *resourced based view of the firm* by Wernerfelt (1984). The resourced based view of the firm is a deeply analytical view of sources and methods of organizational wealth creation and capture. Teece et al. (1997) stated such “quasi markets” by an organization could hinder learning and internal technology of that organization. Bromiley and Rau (2016) argued that there were too many variables in the resource-based view to delineate sustained competitive advantage, and this view did not directly translate into normal operations management research. I used a narrowed perspective for this reason to focus on dynamic capabilities, as set by Teece (2007), and find how using such a strategy could influence organizational performance.

Procurement. Baumol (1947) discussed procurement theory on a national level as a government purchasing for the country. Researchers have later refined it as gathering of goods, services, and all processes to keep the organization running (Andersson & Norrman, 2002). Researchers have noted that procurement is an ever-evolving structure in the organization. According to Puschmann and Alt (2005), E-procurement theory is use of the Internet (both internal and external of the organization) to provide cheaper cost and add efficiency to the organization. Diabat et al. (2013) stated that in green purchasing theory, the procurement of goods or services have a low risk to the environment and the processes that make it happen. Procurement is the unit that sets the flow of the

organization and has reach from product pricing to production speed to the consumer and is worthy of study.

Conceptual Framework

Supply Chain

Hervani, Helms, and Sarkis (2005) spoke about the importance of supply chain performance measurement and how organizations should look both interior and exterior to gain a true reading of performance measurement. O'Rourke (2014) noted that limitations in supply chain sustainability included the measurement of environmental and social impacts due to a lack of data and a need for better decision-making tools. Mentzer et al. (2001) defined supply chain management as the oversight of materials, information, and finance processing from origin to consumer, along with coordinating both upward and downward flows and including internal and external factors.

Handfield and Bechtel (2002) and Swafford, Ghosh, and Murthy (2006) stated the three main parts to the supply chain included procurement, production, and distribution. These can be seen as scientific groupings that can be used for research in management, as proposed by Taylor (1914). The procurement section of the supply chain is the section responsible for initial purchasing and contracts (Bajari & Tadelis, 2001). In an effort to define supply chain procurement, Andersson and Norrman (2002) stated that it pertained to obtaining goods and or services required by an organization to meet the needs of that organization.

There are dimensions for a supply chain to be described as agile: alertness, which means that it can detect changes and emerging threats, and then change rapidly.

According to Owusu-Nyamekye and Eggertsson (2014), an agile supply chain will also

need to have access to relevant information regarding the current processes. An updated procurement section of the supply chain should be flexible, such that it can be bent to suit the supply chain needs and the procurement process. A supply chain should provide a means of improvement, integration with the existing structures and operational practices that it would require in the implementation process (Blome et al., 2014). The purposed research furthers knowledge in a strategy skillset that bolsters both procurement and operations management in risk reduction.

Supply and Demand Competencies

A supply chain for a particular company will have a demand and supply side (Baghalian, Rezapour, & Farahani, 2013). O'Rourke (2014) stated that for a successful procurement process, an organization must work towards ensuring that the procurement process is an accurate and timely for the supply chain. There are demand side competencies and supply side competencies, which must be integrated for the success of procurement process.

Baghalian et al. (2013) noted that the supply side of an organization would emphasize the internal mechanisms of a business, such as the processes, inputs, and effective value chains. The demand competencies will capture the external forces, such as the market, products, and associated services. The supply side will point to the competencies of the business, and the demand side will entail the external market characteristics. Both supply and demand are first worked within procurement and are comprised of the integrated needs of the organization.

Procurement Strategy

The thought of not purchasing more than one will sell is part of a procurement strategy, along with attention to the buyer-supplier relationship; both of these are features to be considered by procurement management (Murray, 2009; Virolainen, 1998).

Knudsen (2003) explored the supply chain coordination and the importance of alignment within the organization. Eltantawy et al. (2015) defined supply chain coordination as a way to improve supply chain performance by aligning plans and objectives. Coordination can group suppliers into three categories, according to Gosling, Purvis, and Naim (2010). Gosling et al. stated that the categories included framework agreement suppliers, preferred suppliers, and approved suppliers.

Standtler (2015) stated that the procurement section was responsible for planning and strategy that could include the consumer. Putting forth the idea of suppliers and consumers being linked all along the length of the chain, no longer isolated at either end and that this could actually be used as a corporate and consumer tool alike (Egels-Zandén & Hansson, 2016). Bolandifar, Kouvelis, and Zhang (2016) showed how inbound pricing structure influenced procurement all the way to the pricing of the final product. Bringing the item in at a lower price point, gives the organization competitive advantage and adds value to the organization's performance overall (Christopher & Ryals, 2014). This finding was in line with Penrose's (1959) economic thinking who stated that the ability to lower product price point was determined by the motivation, skills, and experiences of key managers. The finding also indicated support for Standtler (2015) who noted that choices in procurement should consider and include the consumer. The need has been shown for progressive research in procurement strategy.

The Dynamic Environment

The word dynamic referred to the ever changing and evolving business environment or landscape (Eisenhardt & Martin, 2000). The term capabilities referred to the skills or competences needed by those in strategic management to adapt, innovate, integrate, or reconfigure to the circumstance (Li & Liu, 2014). According to Winter (2003), dynamic capabilities theory separated learning a skill from the skill itself and the difference between the levels of dynamic (technology and industry) and macrodynamic (innovation, competition, and coordination of internal and external competences). Learning is spoken of as a process, while the skill itself is the competence. Being dynamic, the essential point influences the macrodynamic, and both have influence on the organization (Joslin, Pribsch, & Singleton, 2014). Michailova and Zhan (2015) stated that such influence on an international business had a direct effect on innovation, as well. International organizations' expansion can be increased with three pieces of dynamic capabilities—capability possession (distinctive resources), capability deployment (resource allocation), and capability learning (dynamic learning), according to Luo (2001). In the case of this study, dynamic performance referred to the distinctive resource, and the implementation of the survey would be resource allocation and the correlated information becomes dynamic learning.

Zahra, Sapienza, and Davidsson (2006) stated that overlapping definitions and contradictions left questions in the ability of dynamic capabilities in value creation. However, one could state that creation and subsequent use of dynamic capabilities could change management's perception. Zollo and Winter (2002) considered development of capabilities and found that it took processes, such as accumulated experience, knowledge

articulation, and knowledge codification. Their findings showed that this built both dynamic and operational routines. This notion was supported by the work of Subramaniam and Youndt (2005) who wrote that intellectual capital influenced several innovative capabilities in the firm. Teece (2012) described dynamic competences as not only ordinary capabilities, but also those capabilities that may be based on the skills or knowledge of one or more executives rather than organizational routines. Part of procurement is sustainable supplier management, Foerstl, Reuter, Hartmann, and Blome (2010) noted that by conducting responsible purchasing, such sustainable supplier management mitigates part of the risk. The work completed in this research study was quantitative in nature and applied through APICS to supply chain professionals.

Key Variables and or Concepts

Seminal Thoughts

Caves and Porter (1977) discussed barriers created by resource distortion at the start and how too many or too little resources could affect the supply chain. Porter (1981) then brought five forces (new entrants, substitutes, buyer, supplier, and competitors) to bare, showing that contingency theory needed expansion and that a company without direction would crumble. Wernerfelt (1984) challenged contingency theory by stating that a resource-based view would create a better flow of management in the firm. Houlihan (1985) stated supply chain management was part of operations management that also entailed strategy, marketing, production, distribution, and service. This finding constituted the flow of a product from procurement to distribution.

Cooper, Lambert, and Pagh (1997) agreed with Houlihan (1985) and stated that, along with respective internal functions (e.g., capabilities and finance), there was a need

to keep close observance on the organizational exterior along with the interior. This finding was again reminiscent of Porter's (1981) five forces. The term for issues or problems on the supply chain are called "disruptions," as told by Ambulkar et al. (2015), who also stated that a firm's agility could make or break the firm during such disruptions. Early authors of management and strategy theory considered refining the flow of the organization, both in a more efficient and sounder economic manner.

Flexibility and Agility

An organization's supply chain "agility" or "flexibility" refers to the ability of the supply chain to cope with disruption, according to Aaker and Mascarenhas (1984). Swafford et al. (2006) stated that procurement had a direct effect on the flexibility of the global supply chain. When an organization has product waiting their turn at the congested Panama Canal, the ability to obtain a higher place in line at the canal or obtain enough product from elsewhere or gain an extension from the consumer – being maneuverable – is key (Aaker & Mascarenhas, 1984; Herrera, Agrell, Manrique-de-Lara-Peñate, & Trujillo, 2016).

The functions of a supply chain are always diverse, but these resonate with the market that is being handled. The existence of internal dynamic capabilities must cope with the changing environment to achieve product success in the market. Standtler (2015) suggested that an organization must have two dynamic capabilities that can modify the supply chain activities: a smart and flexible dynamic capability and a sustained internal orientation. The two activities can be made in a way that planning capabilities are likely going to contribute to market success and enabling a company to respond to changes in the market and technology.

Procurement Genres

Diabat et al. (2013) defined green purchasing as procurement of goods or services (both up and down stream) that had a reduced risk on the environment and the processes (providing specifications, require certifications, supplier evaluation, etc.) that made it happen. According to KhidirElTayeb, Zailani, and Jayaraman (2010), drivers of green procurement would be regulations, consumer pressure, social responsibility and expected organizational benefits. Dubey, Bag, Ali, and Venkatesh (2013) showed a link between green procurement and organizational performance. Sarkis et al. (2011) stated that path dependency theory stemmed from this aspect. Path dependency theory is considered when the decision-makers make choices that result in an increasing return.

This relates to the upstream in use of processes, such as e-procurement. Puschmann and Alt (2005) defined E-procurement as use of the internet (both internal and external of the organization) in streamlining the needs of the supply chain. This not only reduces paper use, but also provides the ability to obtain goods at a lower price and obtain them quicker. This is an updated concept, first presented in 1926 by Sraffa when he spoke of the theory of value having pedagogic worth. To reduce cost and enhance organizational efficiency, Lewis-Faupel, Neggers, Olken, and Pande (2014) explained that e-procurement adds to an organization's ability to have a global choice and opportunities. A link between green purchasing and e-procurement has been shown in work by Walker and Brammer (2012), and their findings show that e-procurement will save money but may leave out smaller, local suppliers.

Carter and Narasimhan (1996) stated that purchasing practices should come from and be linked to organizational priorities to be considered strategically. Attributes to the

procurement pricing that should be a focus of global supply chain management processes that include brand, price, delivery, technology used, and spare parts lead times, according to Bendixen, Bukasa, and Abratt (2004). Karakul and Chan (2010) stated that in a single period joint pricing and procurement with substitute products could entail one-time choices that face price dependent random demands.

Cepeda and Vera (2007) described a difference between operational capabilities (how you make a living) and dynamic capabilities (how operational routines are changed). One of the scholarly issues raised was that definitions of the two have very similar perspectives. This finding followed the concept by Helfat and Peteraf (2003) who gave capabilities a life cycle. Sirmon, Hitt, Ireland, and Gilbert (2011) not only spoke on life cycle, but also added that actions can be taken on any level to support sourcing and aid in gaining competitive advantage. Both Helfat and Peteraf (2003) and Cepeda and Vera (2007) agreed that, although dynamic capabilities were important, only when coupled with operational capabilities did these form complete competitive advantage. The changing global business environment requires organizations to develop, adapt and advance or be left behind.

Procurement and Dynamic Capabilities

Considering one structure (procurement) in the supply chain (procurement, production, and distribution), one would think that Powell's (1995) theory of total quality management was easy to execute, but this was not true in practice. Not all staff members need the same amount of knowledge or skill at the procurement level, not all employees have the same personal stake, Due to the complexity, Yusof and Aspinwall (2000) showed that it would be difficult to implement total quality management. This would also

not give the perspective of how the competences established by Teece et al. (1997) would influence the performance of the organization.

Sustainable supplier management can have the effect of not only enhanced operational performance, but also provide a good source for competitive advantage, as expounded by Akhavan and Beckmann (2017). Per Subramanian and Gunasekaran (2015), sustainability is a large and diverse area of the supply chain. Tseng, Chiang, and Lan (2009) made the point that in procurement strategy, sustainable suppliers are essential. Dynamic capabilities influenced the four stages of supply chain management innovation, according to Lin, Su, and Higgins (2016), who said that the four stages included relational capability, sensing capability, absorptive capacity, and integrative capability.

Spring and Araujo (2014) stated that “indirect capabilities” were often overlooked, but have an effect on overall organizational performance. They also noted a difference in the fit between supply chain design and management. Teece (2007) explained that measurement could be accomplished through use of technical and evolutionary fitness. This concept was followed and extended by Stadler, Helfat, and Verona (2013) who stated that evolutionary fitness depends on technical fitness and market demand. Later, Helfat and Peteraf (2015) found that technical fitness could not be negative and could be defined as the measure of the individual’s capability to accomplish a task. Kindström, Kowalkowski, and Sandberg (2013) recalled the point of capturing the micro-foundation activities of: seizing, sensing, and reconfiguring whenever possible bares consideration. Protogerou, Caloghirou, and Lioukas (2012) considered dynamic

capabilities as a multi-dimensional construct that had the three underlying factors for measurement: coordination, learning, strategic competitive response in their study.

Summary

This chapter has shown that the marketplace now has increasing expectations of cost, speed, innovation, and satisfaction (Billington & Davidson, 2013). Zheng, Roehrich, and Lewis (2008) first addressed the concept of increased expectations. They stated that dynamic interplay between relational and contractual mechanisms did not tend to follow consistent patterns. Supply chain management needs to be fluid to create required agility. The ability to be flexible reduces risk (Ketchen & Hult, 2007). This research study rendered answers that might aid in agility.

Procurement is more than just what you purchase (Murray, 2009; Virolainen, 1998). The principles of green procurement aid procurement managers by showing them how to make better choice. This makes path dependency happen with more ease (Dubey et al., 2013; Sarkis et al., 2011). Procurement has a deep and lasting effect on every section of the supply chain from sourcing to price point. When one uses e-procurement, the bigger picture needs to be observed at and local or offline vendors need to be put into consideration too (Walker & Brammer, 2012).

Teece (2014) brought dynamic capabilities theory full circle to the global organization and supply chain. Dynamic capability has a proven backbone of adaptability and flexibility since the beginning (Teece et al., 1997). Hult and Sjölund (2017) applied dynamic capabilities to marketing and stated that dynamic competences did have a direct effect on organizational performance. Research of procurement and dynamic capabilities showed how far the theories progressed to note areas for future work. The literature from

Chapter 2 provided not only an understanding of the subject matter, but also the need for research. As part of the literature review, I showed that this research was salient not only on an academic level, but also added value on a professional level. In Chapter 3, the research is discussed at length.

CHAPTER 3. METHODOLOGY

Introduction

Chapter 1 of this study was focused on dynamic capability theory usage in procurement (Pitelis & Teece, 2016). In Chapter 2, I explained that both procurement and dynamic capabilities have pedagogic and professional value to every global or multinational company (Sarkis et al., 2011). In Chapter 3, the emphasis is on discussing the *how* of answering: How do dynamic capabilities used in the procurement section of the global supply chain affect the performance of the overall organization?

Skinner (1956) discussed the need for graduate schools to develop skills in both discovery and discrimination of new information in their students. In this research, I considered fulfilling both needs. In this chapter, the construction of research of dynamic capabilities used in procurement and the effect had on organizational performance is discussed.

Research Design

To answer the quandary, a rounded view was obtained from a closed survey, created from two prior surveys, to gain quantitative data coming from global supply chain managers in several industries (Blome et al., 2013; Handfield et al., 2015). The original two instruments were combined; by using all acquired data, a multi-level picture of a global supply chain emerged. Du et al. (2012) took such a dual stance when they completed both a quantitative and qualitative study to gain a well-rounded perspective on an effective supply chain. He et al. (2013) used two very different concepts in a survey to gain perspective on knowledge transfer between supply chain actors. The instrument was

comprised principally of a 7-point Likert scale resulting in quantitative data. In this study, I used linear regression and correlational analysis.

Population

I administered the dynamic performance instrument (Appendix A) through APICS via the supply chain channel online to their full membership of approximately forty-nine thousand supply chain workers across the globe, comprising of a multitude of industries. APICS (2017) is the global credentialing agency for persons who wish to work on any part of the global supply chain for 95% multinational or global organizations. The chance of bias was reduced, and reliability was increased, as I had no direct contact with respondents, as suggested by researchers (James, Demaree, & Wolf, 1984). I expected the survey would be left open for a period of 35 days. The scope was the global supply chain professionals across all industries.

Instrumentation

The surveys used included Blome et al. (2013) and Handfield et al. (2015). The composite reliability and average variance extracted values each exceeded the threshold of .70 and .50, respectively, as established by Fornell and Larcker (1981). I combined the surveys and focus on competence, agility, performance, and orientation.

Blome et al. (2013) investigated production and supply management activities on the supply chain, along with distribution and demand management related activities, with data from 121 global supply chain professionals. Blome et al. showed a management perspective. The composite reliability and average variance extracted values each exceeded the threshold of .70 and .50, respectively, in this survey. Handfield et al. (2015) took a more organizational perspective. The questionnaire was completed in two phases,

and tests for bias were conducted regularly and were done throughout. The average variance extracted exceeded the .50 minimum required for use of the dynamic capabilities construct. As for composite reliability, results went beyond what was required to show the validity of the model as acceptable.

The instrument was comprised principally of a 7-point Likert scale. A Likert scale is an ordinal scale used by respondents to measure the degree in which they agree or disagree with the information at hand (Sullivan & Artino, 2013). In turn, these measurements were used to create a continuous variable, as the data took a value between the minimum and maximum (Hayes & Preacher, 2014). According to Kogan, Alles, Vasarhelyi, and Wu (2014), this generated continuous data, as the variable might take on any value inside a finite interval. The instrument proposed rendered quantitative data for processing.

Data Collection

This combined survey was uploaded to an Internet-based program called SurveyMonkey. The letter of invitation with a link to the survey was posted on the supply chain channel of APICS. All responses were printed out and uploaded to SPSS for analysis. As stated before, the survey was left open for 35 days.

To answer research questions (because I had clearly defined independent and dependent variables), I used linear regression and correlational analysis. Correlational analysis provided the strength of relationship between the variables, and regression analysis provided the form of the relations. For parametric statistical analysis, I had to ensure variables were distributed normally or as close to normally as possible. Because the variables could be presented in the nominal form, I used ANOVA factor analysis to

find out which of the independent variables had the greatest effect on the dependent variables. The independent variables included supply side and demand side competence, process compliance, supply chain agility, operational performance, stakeholder alignment, systems orientation, supply alignment, performance improvement, supply agility, and location. The dependent variable included organizational performance on the supply chain (procurement, production, and distribution).

The data were obtained and correlated from the first 140 respondents, as a convenience sample using SPSS software. Bechhofer (1954) first formed the concept of single sample and multiple decision procedure for ranking. This concept not only referred to reliability and validity, but also ethics, as stated by Randall and Gibson (1990). The answers from this kind of research could be compared to existing information from the original two surveys put forth in the seminal work by Blome et al. (2013) and Handfield et al. (2015). In this case, I established not only an answer to the query, but also established a standard of measure for the supply chain. This furthered the work completed by Cheng, Chen, and Huang (2014), who identified factors that influenced innovation and showed how dynamic capabilities should be reinforced across the overall supply chain to improve performance.

Summary

One questioned the following: What influence do dynamic capabilities used in the procurement section of the supply chain (sensing, seizing, and opportunity/threat management) have on organizational performance (procurement, production, and distribution)? The independent variables included supply side and demand side competence, process compliance, supply chain agility, operational performance,

stakeholder alignment, systems orientation, supply alignment, performance improvement, and supply agility. The dependent variable included organizational performance on the supply chain (procurement, production, and distribution).

With a focus on both managerial and organizational perspectives, I obtained the best and most reliable picture of this situation; this was reminiscent of work Avolio, Bass, and Jung (1999) who used a dual approach to gain better perspective. I purposed components in strategy, dynamic capabilities, and procurement. Per Di Stefano, Peteraf, and Verona (2014), using more than one perspective gave one an opportunity to develop a “drivetrain model.” Both Avolio et al. (1999) and Di Stefano et al. (2014) showed that a completion of information supplied results, which gave more rigor to the literature (Brandenburg, Govindan, Sarkis, & Seuring, 2014).

CHAPTER 4. RESULTS

Introduction

This chapter focuses on the findings of the study. The research presented an academic measurement in time. The question under investigation was what influences did procurement of the supply chain have on the overall organizational performance. As the current survey was comprised of two prior surveys, the results of this study provide a measurement in time (Blome et al., 2013; Handfield et al., 2015). This chapter contains the research overview, data collection, research question, methodology, data analysis, results of the study, hypotheses, discussion, and chapter summary.

Research Overview

The study was comprised of quantitative data that followed a correlational design to discover the effect that the procurement section has on the overall organizational performance. A survey comprised of two prior instruments named dynamic performance was posted to the supply chain channel to accumulate information from global supply chain professionals (Blome et al., 2013; Handfield et al., 2015). The findings were used to answer the research question, test the null hypothesis, and provide a measurement in time.

Data Presentation

Keiser University's Intuitional Review Board (IRB) gave permission to proceed with the study (#RB000WA18DB20) on February 22, 2018. The study was posted to the supply chain channel on APICS on February 24, 2018. This invitation, survey link, and informed consent information. APICS distributed the post through the supply chain

channel, member e-mail and their social media sites (Linkedin, Facebook, and Twitter). Confidentiality was of high priority throughout the collection process. The survey was created on SurveyMonkey that acted as a third-party host and allowed for implementation without direct contact of participants. SurveyMonkey not only allowed for storage of data, but also maintained the anonymity of the participants. No names or other identifying data was collected as a way of maintaining anonymity and reduce bias. Results came from 144 participants, with 140 completing the survey; the four incomplete surveys were discarded. Ethics were considered a priority and observed throughout the research; this avoided issues with privacy and deception.

Research Question

How do dynamic capabilities used in the procurement section of the global supply chain affect the performance of the overall organization? This question was the focus of my study, detailing the importance of procurement strategy to the overall organization performance with an additional, smaller observation on how procurement strategy interacted with both production and distribution levels of the firm. This question also provided a measurement in time for dynamic capabilities research for future academics.

Research Methodology

This quantitative study with a correlational design was developed to investigate the independent variables (supply side and demand side competence, process compliance, supply chain agility, operational performance, stakeholder alignment, systems orientation, supply alignment, performance improvement, and supply agility), and how each worked with the dependent variable (organizational performance on the supply chain -procurement, production, and distribution). Arlbjørn, de Haas, and Munksgaard

(2011) stated that most reliable supply chain management studies were quantitative in nature. The configuration of such a quantitative study provides solid building blocks to supply chain strategy and agility, as per Ivanov (2010). This study was developed to observe using dynamic capabilities in procurement and the effect on overall organizational performance.

Data Collection/Rate of Response

Participants for this study consisted of supply chain professionals. The survey was open to participants of APICS (the global credentialing agency) globally. For this survey, the target was global supply chain professionals who either used or were affected by dynamic capabilities used in procurement. The request was made to APICS, as they contained the largest concentration of supply chain professionals at the time and permission was granted.

The research was approved on February 22, 2018. The survey was open and posted on February 24, 2018 and every few days I would post reminders requesting professionals to take part. On March 23, 2018 (the original closing date), there were only 100 participants. Dr. Djokic suggested that the survey be left open for a few more days. The survey closed on March 28, 2018 with 144 participants. Four respondents started but did not finish the survey—this information was discarded. This left 140 completed surveys, which were analyzed.

Data Analysis

SurveyMonkey allowed print out and download answers and analytics to each question. SPSS correlational and regression analysis was used. Using SPSS Version 25

for Windows allowed for a double check on the statistics and further examined the relationship between the independent and dependent variables.

Significance, Population, and Sample

Finding the right people and or place to conduct research is of great importance in achieving proper results. Bishara and Hittner (2012) stated that statistical significance tests were used to deduce information to see if reflected results are true or mere sample error and investigated error reduction. Though the supply chain was global, the amount of people who worked in the field was limited. This need for error reduction promoted looking for the focused area and membership that APICS provided.

Results of Study

Descriptive Statistics Analysis

This survey had 140 respondents, of which 89 listed the company where they worked. Most were questions required the use of a 7-point Likert scale; the demographics in this research included sex, age, country, and company or industry. In this survey, both male and female were represented at 50% each. Age was statistically observed as 23 to 34 (14.29%), 35 to 44 (28.57%), 45 to 54 (50%), and 55 to 64 (7.14%). Most respondents came from the United States (92%), with the other (8%) from the United Kingdom. Industries included food, floral, energy, toys, healthcare, computers, manufacturing, aerospace engineering, and education. Some of the respondents worked for Dominos, Nature's Power and Energy, Northeast Testing, Dewberry, Bricks and Minifigs, CHG, Industrial Finishes and Systems, and Fiddlehead Florist.

Dynamic Performance Results

The combined survey gave depth in perspective observing Teece's (2014) dynamic capabilities through both Porter (organizational) and Mintzberg (managerial) levels respectively (Blome et al., 2013; Handfield, et al., 2015). In the following subsections, an in-depth picture arises.

Supply side competence. In Question 5, when asked if the supply chain management (SCM) of the firm was doing all that it could to deliver performance, most people *agreed* (50 respondents/35.71%). Many people said either *mostly agree* or *sort of agree* (80 respondents /58%, equally distributed); this finding indicated that most supply chain workers thought that the SCM team could do more. The in simple regression model shows a *p*-value of .172. The mean was 2.100. A significance value in ANOVA of .172 showed strong evidence of retaining the null hypothesis. The unstandardized coefficient being .242 and standard deviation of .146 showed that SCM delivering performance influence on overall company performance was of little statistical significance.

In Question 6, when asked if SCM was meeting the operational needs the group split: *agree* 42.86%, *mostly agree* 14.29%, and 42.86% only *sort of agreed*. A *p*-value of .094 proved the null hypothesis. The mean was 2.1143, and the standard deviation was 2.769. With an adjusted *R* squared value of -.003, it showed that very little organizational performance was explained by this independent variable. A significance value in ANOVA of .380 showed evidence to retain the null hypothesis and that it was of little statistical significance.

In Question seven participants were asked the production management meeting supply chain performance needs. The greatest number of respondents selected *mostly*

agree (50%). It was only 36% who *fully agreed*. Fourteen percent said they *sort of agree*. With a significance value of .133 in ANOVA, one could see a lack of statistical significance. The standard deviation of .71236 and a mean of 1.8214 supported the retention of the null hypothesis.

In Question 8, when asked if production management was meeting operational needs of the supply chain, 36% of participants *agreed*. The largest group answered *mostly agree* (50%), and 14% *sort of agreed*. The mean was 1.7571, and the standard deviation was .6911. This finding had a statistical significance .002 showing a rejection of the null hypothesis. This finding showed a strong correlational value between this supply side competence and organizational performance.

Table 1

Supply Side Competence Combined Total

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.335	4	10.834	5.276	.001 ^b
	Residual	172.485	84	2.053		
	Total	215.820	88			

Note. a. Dependent Variable: Company Performance

b. Predictors: (Constant), Production management meets the operational needs, Supply management meets the operational needs, Production management delivers the desired performance within our supply chain, Supply management delivers the desired performance

When viewed as the complete section, supply side competence shows that it was statistically significant with a *p*-value of .001. The model summary had an adjusted *R* squared value of 16.3%. It also showed with a rejection of the null hypothesis with a correlational value of .322. Here it could be seen that individual dynamics might have little effect on organizational performance; however, in the combined dynamic capability

supply side competence, there was an observed strong statistical significance. This finding showed that when these four dynamics interacted, organizational performance was enhanced.

Demand side competence. In Question 9, when asked if demand management was delivering desire performance the highest number of participants selected *agree* (42.86%), while most participants were split between *sort of* and *mostly agree* (28.57% each). The mean for this variable was 1.8857, and the standard deviation was .63570. The *p*-value was .905, which indicated the need to retain the null hypothesis and was not statistically significant. According to the adjusted *R* square, 1.1% of variance was explained from demand management delivering performance. This finding was a poor rate of prediction.

In Question 10, when asked if demand management met the needs of operations in the firm, it was *agreed* (48.6%) that this was the truth. The mean was 1.9143, and the standard deviation could be observed as .80005. With a correlational *p*-value of .243, one could see a lack of statistical significance. In model summary, the adjusted *R*-value showed.4% of the dependent variable, as explained by the independent variable. ANOVA give an *f*test reading of 1.380. This finding led to one retaining the null hypothesis.

In Question 11, distribution management meeting needs of supply chain performance, was seen to be doing its job 42.86% respondents hit *agree*. There was a standard deviation of 1.08896 and a mean of 2.05. Correlation indicated a *p*-value of .066 and showed some evidence to retain the null hypothesis. This model had an adjusted *R*-value of .027. Here, no statistical significance was seen.

In Question 12, the results of distribution meeting operational needs were an overwhelming 61.54 % who selected *agree*. The mean was 1.8357, and the standard deviation was noted as 1.16675. This question had an adjusted *R*-value of -1%; this was not a good predictor. It had a *T* test of 1.859. This model showed no statistical significance.

Table 1

Demand Side Competence Combined Total

		<u>Coefficients</u>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	.723	1.052		.687	.494
	Demand management delivers the desired performance	.533	.378	.221	1.413	.161
	Demand management meets the operational needs	.124	.215	.064	.577	.565
	Distribution management delivers the desired performance	.521	.230	.348	2.269	.026

Note. a. Dependent Variable: Company Performance

Though individually, the dynamic variables have been observed to have no statistical significance, combining them to form the dynamic capability of demand side competence did raise significance slightly. The overall demand side competence *p*-value in ANOVA was .90, which indicated strong evidence to retain the null hypothesis. The adjusted *R* value of 4% also showed that very little organizational performance was explained by the dynamic capability of demand side competence.

Process compliance. In Question 13, process execution by demand management followed by staff became more varied in the answers: 14.29% *agree*, 57.14% *mostly*

agree, 7.14% *sort of agree*, 14.29% *neutral*, and 7.14% *sort of disagree*. This question had a mean of 2.4571 and a standard deviation of 1.3398. The correlation p -value was .987, showing no statistical significance. The adjusted R -value of -1% showed this had little bearing on organizational performance. With an unstandardized coefficient of .002, it showed the null hypothesis was retained.

In Question 14, Half (50%) of participants *mostly agreed* that process was executed by supply management. Here, the mean was 2.4714, and the standard deviation was 2.0266. The F test in ANOVA showed .158. Correlational p -value was stated as .692, which led to retaining the null hypothesis. The model summary showed an adjusted R -value of -1%, showing that this had little bearing on organizational performance.

Question 15 asked if it reduced production management processes and if these were handled by staff. For this question, 48.6% selected *mostly agree*. It was observed in this question that the mean was 2.0071, and the standard deviation was .75385. With a p -value of .48, the null hypothesis was rejected. ANOVA supported this finding. This also showed an adjusted R -value of 3.3% influence on organizational performance. The T -test value being 2.002 showed production management process handled by staff as a good predictor of firm performance.

In Question 16, the question was if it reduced distribution management processes if these were handled by staff. Moreover, 48.6% selected *mostly agree*. This had a mean of 2.1071 and standard deviation of .9864. With a correlation p value of .589, the null hypothesis was retained. An F test of .294 showed there was no statistical significance. The adjusted R -value showed -.8%, stating there was miniscule if any influence on organizational performance.

Table 2

Process Compliance Combined Total

<u>Model Summary</u>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239 ^a	.057	.012	1.55644

a. Predictors: (Constant), Distribution management processes are 100% executed and followed by our staff, Demand management processes are 100% executed and followed by our staff, Supply management processes are 100% executed and followed by our staff, Production management processes are 100% executed and followed by our staff

The individual capabilities showed meager results with only production management processes handled by staff rejecting the null hypothesis. The overall influence of the dynamic capability process compliance, with an adjusted *R*-value of 1.2% could be seen to have some influence on firm performance. The ANOVA *p* value of .289 states the overall dynamic capability process compliance is not statistically significant.

Supply chain agility. In Question 17, half (50%) of the respondents stated that they Agree that their company can adapt to new consumer requirements. The analysis indicates that the standard deviation is .75715 and the mean is 1.7286. The correlational *P* value of .153 shows no statistical significance, this supports the null hypothesis. With an unstandardized coefficient of .320, this individual capability was not a good predictor of organizational performance. The adjusted *R*-value of 1.2% supports this.

In Question 18, the ability to adapt to new market developments is assessed. More than 45% of participants Agreed. Here the mean is 1.8929 and, in this question, a standard deviation of .99420 was found. With a *P* value of .025 and the *F* test of 5.215,

this is a good statistical significance and rejects the null hypothesis. The adjusted R square value of 4.6% shows adapting to new market developments has influence on organizational performance.

In Question 19, when the ability to react to increased and decreased again, the answers became varied in an interesting way (28.57% *agree*, 28.57% *mostly agree*, 28.57% *sort of agree*, 7.14% *neutral*, and 7.14% *sort of disagree*). This question had a mean of 2.1143 and a standard deviation of 1.25856. In correlational analysis, the p value was seen as .857 retaining the null hypothesis and showing no statistical significance. This model showed an adjusted R squared value of -1.1%, stating how little effect this variable has on firm performance.

In Question 20, though 38% *agreed* that their company could adjust their product portfolio to the market, the other 62% did not. The mean here was 2.2500, and the standard deviation was observed as 1.2182. The correlational p value was .345, retaining the null hypothesis and showing no statistical significance. The unstandardized coefficient of -.136 showed that this had little, if any, bearing on organizational performance.

In Question 21, regarding the firm's reaction to supply side changes, over 35% *agreed*, while the other 64% was divided among the lower answers. The mean was 2.4071, and the observable standard deviation was 1.46369. The p value was .455, thus retaining the null hypothesis and showing no statistical significance. The adjusted R -value being -.5% showed almost no bearing of supply side changes on organizational performance.

Though, as individual capabilities, this section was weak, combining it with the dynamic capability of “supply chain agility” did show some strength. The adjusted R squared value being 5.8% showed this dynamic capability of supply chain agility having influence on overall organizational performance. The ANOVA indicated a P value of .076 showed no statistical significance and supported the null hypothesis.

Operational performance. In Question 22, when asked about the quality of customer service in comparison with competitors, the answer were split between *great* and *good* (42.86% each). This variable had a mean of 1.3571 and a standard deviation of .48088. The p value was .808 and showed that the null hypothesis was retained; moreover, there was no statistical significance. With a .087 unstandardized coefficient, one observed that quality of customer service was a poor predictor of firm performance.

In Question 23, ranking the supply chain cost with that of a competitor, half expressed it was *good*, and 29% expressed it was only *okay*. The mean seen here was 2.0929, and the standard deviation presented as .67745. This had a P value of .743 showing no statistical significance and retaining the null hypothesis. The ANOVA F test value of .108 showed this variable a poor predictor of organizational performance and an adjusted R -value of -1% supported this finding.

In Question 24, service level performance as in comparison with competitors, showed 36% responded *good*, while 29% answered *great*. The finding showed a mean of 2.2429 and the standard deviation of 1.01692. This had a correlational P value of .017, rejecting the null hypothesis and showing statistical significance. The model showed an adjusted R -value of 5.3%, indicating this variable had influence on organizational

performance. The unstandardized coefficient of .398 showed service as a good predictor of organizational performance.

In Question 25, respondents were asked to rank supply chain flexibility against their competitors, although most expressed that it was *good* (50%), the bulk were split with *great* and *okay* at 21% each. The mean presented as 2.1429 with a standard deviation of .83598. The *P* value being .078 showed retention of the null hypothesis and no statistical significance. The adjusted *R* square being 2.4% showed that flexibility had some bearing on organizational performance.

This finding showed the individual capabilities to have some merit, but when combined as the dynamic capability of operational performance, it became particularly significant. With a *P* value of .007, it was statistically significant and rejected the null hypothesis. The adjusted *R* squared value was 11.2% and showed the dynamic capability of operational performance had strong bearing on organizational performance. Considering the unstandardized coefficients, one could note this overall group was a good predictor of organizational performance.

Internal stakeholder alignment. In Question 26, do purchasing professional focus on competitive strategy was the next quandary, more than 36% of respondents stated they *mostly agreed*. With this variable, the mean was 2.5286, and the standard deviation was 1.21999. The correlated *P* value was .791; this related no significant statistics and retained the null hypothesis. The adjusted *R* squared value of -1.1% indicated this had little impact on organizational performance. The unstandardized coefficient of -.038 showed purchasing professional focus on competitive strategy as a poor predictor of organizational performance.

In Question 27, purchasing (staff) had *good* knowledge of a firm's strategic goals, was a question where the split was pronounced and equal (42.86% *agree* and 42.86% *mostly agree*). The reported standardized deviation was 1.06758, and the mean was 1.8643. The *P* value for this variable was viewed as .042; this was statistically significant and rejected the null hypothesis. An adjusted *R*-value of 3.5% showed that purchasing had *good* knowledge of a firm's strategic goals has influence over organizational performance. The *T* test value of 2.059 showed purchasing (staff) as having good knowledge of a firm's strategic goals to be a good predictor of organizational performance.

In Question 28, participants *agreed* (by 50%) that purchasing performance could be measured as part of the firm's success. Here, the variable had a mean of 2.2000 and a standard deviation of 1.47009. Correlation gave a *P* value of .134; this was not statistically significant and retained the null hypothesis. The adjusted *R*-value of 1.4% showed limited influence on organizational performance. With an unstandardized coefficient of .172 indicated it was not a great predictor.

In Question 29, purchasing is part of the company's strategic planning, the bulk of participants (58%) clicked *mostly agree* or *sort of agree*. The mean for this variable was 2.1643 with a standard deviation of 1.10987. Here, one observed that the adjusted *R* squared value was -.8% showing that, by itself, purchasing being part of the company's strategic planning did not seem to have direct influence over organizational performance. The correlated *P* value was .601; this indicated there was no statistical significance and retains the null hypothesis.

Table 3

Internal Stakeholder Alignment Combined Total

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.570	4	5.642	2.453	.052 ^b
	Residual	193.250	84	2.301		
	Total	215.820	88			

Note. a. Dependent Variable: Company Performance

b. Predictors: (Constant), Purchasing performance is measured in terms of its contribution to the firm's success, the purchasing function has a good knowledge of the firm's strategic goals, How well do you agree with the following about purchasing within your firm? Purchasing professionals' development focuses on the elements of the competitive strategy

With two of the individual variables being significant and two being not significant, one could note how well the outcome of combining the dynamic capability of internal stakeholder alignment might be. However, the *P* value was .52, so it was not statistically significant and supported the null hypothesis. The adjusted *R*-value was 6.2%, indicating that the dynamic capability of internal stakeholder alignment did have influence over firm performance.

System orientation. In Question 30, all activities that take place in purchasing are clearly defined, 50% of respondents answered *mostly agree*. The mean was 2.1214, and the standard deviation was .98527. The correlational *P* value was .298, and this had no statistical significance and retained the null hypothesis. The adjusted *R* squared value of .1% showed a miniscule influence of purchasing activities on operational performance. The *T* test presented as -1.047.

In Question 31, understanding how their work fits into the value chain of the purchasing, a fairly spread out response occurred (*agree* 42.86%, *mostly agree* 21.43%, *sort of agree* 21.43%, *neutral* 7.14%, and *sort of disagree* 7.14%). This variable had a

mean of 2.4214 and a standard deviation of 1.16340. The correlation model showed a P value .015; this showed statistical significance and rejected the null hypothesis. The model summary indicated an adjusted R squared value of 5.5%; this showed this variable to have influence of firm performance. With an unstandardized coefficient of .366, one could state that understanding how one's work fits into the value chain was a *good* predictor of organizational performance.

In Question 32, respondents were asked about the interconnectedness of the purchasing process, with the majority (35.71%) ticking *mostly agree*. With this variable, the mean was 2.8357, and the standard deviation was 3.59978. The P value was .135; this indicated no statistical significance and retained the null hypothesis. The adjusted R -value in the model summary presented as 1.4%. This showed that the interconnectedness of purchasing had some influence on organizational performance. With an unstandardized coefficient of .259, interconnectedness had a little predictive value on organizational performance.

In Question 33, understanding where all activities fit in the purchasing process, over 46% chose *mostly agree*. This had a mean of 2.1000 and a standard deviation of 1.28802. The model summary presented the adjusted r squared value of 2.9%, stating the understanding where activities fit had some influence over organizational performance. The stated P value .061 showed no statistical significance and retained the null hypothesis.

Here, the individual capabilities did not carry much sway, but viewed together as the dynamic capability of systems orientation, the situation changes. The P value was .037, indicating that it was not only statistically significant, but also rejecting the null

hypothesis. The adjusted R squared value was 7.1%, showing the dynamic capability of systems orientation to carry influence with organizational performance. With an ANOVA F test of 2.681, all four variables combined as a good predictor of organizational performance.

Supplier agility. In Question 34, responsiveness to one's schedule delivery changes without excessive cost, participants clicked *agree* 50% of the time. This variable had a mean of 2.5643 and a standard deviation of 2.00076. The adjusted R -value of -.7% indicated that this variable had no influence on organizational performance. The correlation for responsiveness without cost gives a P value of .528; this retained the null hypothesis and showed no statistical significance.

In Question 35, respondents were asked about suppliers' ability to be responsive to company schedule volume changes without excessive cost with; most clicked *mostly agree* (35.71%), and the rest had a wide split (*agree* 28.57%, *sort of agree* 7.14%, and *neutral* 28.57%). The mean was 2.714, and the standard deviation was 1.08848. The correlation indicated that the P value was .528; this showed no significant statistics and retaining of the null hypothesis. The model showed adjusted R squared value of -.7%, indicating there was no influence on organizational performance. One could state that this variable was not a great predictor of organizational performance, as the F test came back as .401 and the unstandardized coefficient of .046.

In Question 36, participants answered the question about the ability to accept late "mix" changes in orders, which the answers came back spread fairly evenly (*agree* 28.57%, *mostly agree* 28.57%, *sort of agree* 21.43%, and *neutral* 21.43%). This variable had a mean of 2.3714 and a standard deviation of 1.08848. The P value of .623 indicated

this was not statistically significant, and the null hypothesis was retained. An adjusted R squared value of $-.9$ indicated that this was of little influence. The unstandardized coefficient of $-.07$ indicated this variable was not a great predictor of organizational performance.

In Question 37, a view of how well suppliers produce modularization of their products, respondents indicated *mostly agree* and *sort of agree*, coming in with 28.57%, respectively. This variable produced a mean of 2.4643 and a standard deviation of 1.05538. Correlation indicated a P value of $.150$; this showed no statistical significance, and the null hypothesis was retained. The adjusted R square value was 1.2%, showing only minor influence on firm performance.

In this case, the individual capabilities, along with the combined dynamic capability of supplier agility both proved not statistically significant. The supplier agility P value presented as $.318$, retaining the null hypothesis. The F test showed some predictor relevance, with a score of 1.192. The combined adjusted R square of $.6\%$ showed a minor level of influence of the dynamic capability of supplier agility on organizational performance.

Supply base alignment. In Question 38, respondents considered how suppliers were evaluated with *agree* being the largest at 35.71%. The standard deviation for this variable being 1.41668 and the mean of 2.4857. The correlation gave a P value of $.242$, which was not statistically significant and retained the null hypothesis. The $.4\%$ that showed in the adjusted R square indicated a minor influence. An unstandardized coefficient of $.140$ indicated minor predictability value.

In Question 39, how well does your company make use of a supplier certification program, 28.57% of participants selected *mostly agree*. The mean for this variable was 2.8714 and the standard deviation 1.64401. Using a supplier certification program had a *P* value of .110, showing a retention of the null hypothesis and no statistical significance. The unstandardized coefficient of -.157 indicated this was not a good predictor of organizational performance.

In Question 40, respondents reviewed site visits to suppliers improving supplier performance; the strongest response was *agree* at 28.57%. This had a mean of 3.0286 and a standard deviation of 1.78701. The *p* value for this variable was .469, which indicated a retention of the null hypothesis and no statistical significance. The *F* test at .530 showed there was only a minor predictor value for organizational performance.

In Question 41, inviting supplier's personnel to one's site was answered by respondents stating *agreed* at 35.71%. The mean was 2.6357, and the standard deviation was 1.83182. With a *P* value of .178, evidence indicated the null hypothesis was retained and that there was not statistical significance. The adjusted *R*-value of .9% showed little influence of this variable on organizational performance.

In Question 42, respondents considered training/education of the supplier's personnel and answered that they *sort of agreed* by an amount of 30.77%. The mean for this variable was 2.8071, and the standard deviation was 1.54964. The *P* value of .004 was evidence of rejection of the null hypothesis and statistical significance. The adjusted *R*-value of 7.9% showed this variable had influence on organizational performance. The *F* test value of 8.581 showed this capability as a good predictor of organizational performance.

Table 4

Supply Base Alignment Combined Total

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.819	5	8.764	4.229	.002 ^b
	Residual	172.001	83	2.072		
	Total	215.820	88			

Note. a. Dependent Variable: Company Performance

b. Predictors: (Constant), Training/education of the supplier's personnel, Site visits by your firm to supplier's premises to help supplier improve its performance, Inviting supplier's personnel to your site to increase its awareness of how its product is used, Assessment of supplier's performance through formal evaluation, using established guidelines & procedures., Use of a supplier certification program to certify supplier's quality, thus making incoming inspection unnecessary.

Though the individual capabilities showed little evidence of being helpful, the combined dynamic capability of supply base alignment stood out. In this combined variable of supply base alignment, the *P* value .002 indicated statistical significance and rejected the null hypothesis. The adjusted *R* squared value of 15.5% indicated there was a strong influence on organizational performance. The *F* test value of 4.229 was evidence that supply base alignment was a good predictor of organizational performance.

Performance improvement. In Question 43, about improved product design performance, respondents *agreed* by 42.86%. This finding had a mean of 2.1071 and a standard deviation of 1.09081. The correlated *P* value presented as .079, which indicated a lack of statistical significance and a retention of the null hypothesis. The model showed the adjusted *R* squared value of 2.4%, meaning it did carry some influence with organizational performance. The unstandardized coefficient of .268 also showed it had some prediction value.

In Question 44, the respondents focused on improved process design and most of results fell between *agree* (35.71%) and *mostly agree* (28.57%). The standard deviation

was 1.04027 for this variable, and the mean was 2.1357. The P value was .029; the evidence showed a rejection of the null hypothesis and was seen as statistically significant. Here, the adjusted R squared value was 4.3%, and this showed improved process design influenced organizational performance. The unstandardized coefficient being .365 indicated this being a minor predictor of firm performance.

In Question 45, the respondents considered improved product quality; the majority answered either *agree* (35.71%) or *mostly agree* (28.57%). For this question, the mean was 2.2429, and the standard deviation was 1.25733. The P value exhibited here was .943; this had no statistical significance and retained the null hypothesis. The model summary showed an adjusted R squared value of -1.1%; this showed there was no influence from this variable on firm performance. With an unstandardized coefficient .10, one could state there was little predictor of organizational performance.

In Question 46, with reduced lead-time the respondent's answers for this came in across the board (*agree* 21.43%, *mostly agree* 21.43%, *sort of agree* 21.43%, *neutral* 21.43%, and *not good* 14.29%). This variable showed a mean value of 2.7429 and a value for standard deviation of 1.35907. The correlation P value was .49. This showed a rejection of the null hypothesis, as this question had statistical value. The F test value was 3.973, which indicated that reduced lead time was a predictor of organizational performance.

The independent capabilities showed two with positive result and two without. The combined dynamic capability of performance improvement had a P value of .006. This was not only statistically significant but also rejected the null hypothesis. Here, the adjusted R square was 11.6%, showing that the dynamic capability of performance

improvement had a strong influence on organizational performance. The unstandardized coefficients combined to show performance improvement was a good predictor of organizational performance.

Hypotheses

A regression analysis of the relationship between independent variables and the dependent variable was applied to test and verify the research hypotheses. All the elements of dynamic capabilities were observed and correlated as individual capabilities and as grouped dynamic capabilities (supply side and demand side competence, process compliance, supply chain agility, operational performance, stakeholder alignment, systems orientation, supply alignment, performance improvement, and supply agility) against organizational performance to determine statistical significance. I investigated the interaction between dynamic capabilities and organizational performance. The hypothesis tested the impact of both individual capabilities and grouped dynamic capabilities on organizational performance. The question was the following: How do dynamic capabilities used in the procurement section of the global supply chain affect the performance of the overall organization? The hypotheses were the following:

H₁₀: The use of dynamic capabilities in the procurement section of the global supply chain is not critical for any global organization to achieve and maintain competitive advantage in the global marketplace.

H_{1A}: The use of dynamic capabilities in the procurement section of the global supply chain is critical for any global organization to achieve and maintain competitive advantage in the global marketplace.

The statistical order of evidence to support the null hypothesis lay in in the dynamic capabilities of process compliance, supplier agility, internal stakeholder alignment, supply chain agility, and demand side competence. This finding showed that process compliance, supplier agility, internal stakeholder alignment, supply chain agility, and demand side competence dynamic capabilities were not viewed as critical, while supply base alignment, performance improvement, operational performance, supply side competence, and systems orientation were observed as critical to organizational performance.

Discussion

The research was conducted to observe the impact of dynamic capabilities on organizational performance. In the world of supply chain, understanding such dynamic capabilities could lead to motivated planning, faster execution, stronger consumer service, and increased profit margin (Gattorna, 2017). Through this type of strategic positioning, supply chain professionals can formulate and create competitive advantage for the organization.

In this research, the importance of supply base alignment, performance improvement, operational performance, supply side competence, and systems orientation was observable and should be drivers of organizational performance. This finding supported the original thinking that procurement use of dynamic capabilities allowed supply chain management to create increased performance, as stated by Handfield et al. (2015). The difference in drivers to outcome from the original work could be attributed to evolution of the supply chain over time.

Summary

This chapter stated findings from a concluded study. The five competencies indicated to be critical supporting the hypothesis included supply base alignment, performance improvement, operational performance, supply side competence, and systems orientation. In the next chapter, the findings and implications of the study, along with recommendations for further studies, are discussed.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

Chapter 5 contains a summary of the findings, significance of the implications, limitations of the research, recommendations for future, and a conclusion. Contemplating previous chapters led to discussion, implications, recommendations, and conclusion show the gap observed in Chapter 4. The dynamic performance survey was used to answer the research question and extrapolate the hypothesis. The data collection, analysis, and findings (both individual and combined) provide educational and practical opportunities in this chapter.

Summary of the Findings

The focus of this research was to look at the outcomes of dynamic capabilities on organizational performance. Location theory by Thünen (1826) and dynamic capabilities theory by Teece and Pisano (1994) created the foundation of the work used in this study. The dynamic performance survey was comprised of two prior surveys, which observed dynamic capabilities on organizational performance from a managerial and organizational perspective.

Dynamic with Impact

The results from the collected data provided empirical evidence to answer both the research question and hypothesis. Of the ten variables tested, it was interesting to note that five supported the null hypothesis (these included process compliance, supplier agility, internal stakeholder alignment, supply chain agility, and demand side competence) and five rejected it (e.g., supply base alignment, performance improvement,

operational performance, supply side competence, and systems orientation). This finding showed that five dynamic capabilities have a sizable impact on organizational performance. The findings also provided that although individual capabilities might have limited statistical significance, it was when these were combined to form a dynamic capability that true significance was held. Furthermore, supply side and operational performance were both organizational competences, while performance improvement, supply base alignment, and systems orientation were managerial competences.

Adding Value

Dynamic capability of supply base alignment exhibited that respondents felt visiting supplier's organizations and training or educating the supplier's personal to the standard required was highly beneficial to improving supplier performance and reflected in the host company's performance. Such value adding activities occurred in the procurement section of the supply chain. According to Cousins and Spekman (2003), this makes procurement a strategic resource and a big part of inter and intra organizational relationships.

Improved Performance

The respondents were then requested to assess the interior of their company at the dynamic capability of performance improvement. This finding showed that improved process design, improved product design, and reduced lead time held the strongest significance. Integrating suppliers, consumers, and the supply chain to create improvement in design, product, and lead time is a big part of procurement strategy. Such integration can create improved operational performance (Frohlich & Westbrook, 2001).

From the perspective of the operational performance, participants expressed that service level performance and quality of customer service were of great importance. Though this competence was often looked at as production and distribution, the protocols were set up as part of procurement strategy. This empirically observes the integration of the three parts of the supply chain (procurement, production, and distribution) to create increased organizational performance (Wong, Boon-Itt, & Wong, 2011). This finding was an internal and external value adding activity.

Setting Protocols

Supply side competence was seen by respondents as important with procurement setting protocols for supply chain and production management. Per work by Chin, Tat, and Sulaiman (2015), an evolution of this competence is apparent in green supply chain management and is seen as a performance enhancer. With an adjusted *R* square value of more than 16%, the supply side competence was observed to have direct effect on organizational performance.

Fitting In

In systems orientation, the study participants expressed a significant need to understand where they fit in the value chain of the organization and a lesser need to know where they fall in the purchasing process. Understanding where one fits in the value chain aids in leading to better competitive advantage. According to Ketchen and Hult (2007), this understanding would lead to focus on key outcomes in cost, speed, quality, and flexibility. According to Wilhelm, Blome, Bhakoo, and Paulraj (2016), as supply chains grow in complexity to multi-tier situations, workers must understand the lead firms purchasing function.

Significance of the Implications

A top-notch supply chain is essential to organizational competitive advantage and performance. Transparency in the procurement section can add to competitive advantage, create worker security, and prevent issues in multi-tier suppliers. Once thought of as 'just part of strategic management' dynamic capabilities have developed to become an integral part of procurement and the supply chain (Pitelis & Teece, 2016). This has become a large part of the sustainable global supply chain and organizational management, according to Land, Nielsen, Seuring, and Neutzling (2015). The dynamic capability theory allows any organization to adapt both internally and externally to the surrounding environment (Teece et al., 1997). Such capabilities provide the transparency level needed in procurement as to increase organizational performance. This is ever more important as global enterprises must cope with mounting uncertainties like the cost of competing or unstable markets (Teece, 2017). Leaving managers to seek a framework with a multi-disciplinary approach.

The results of this research provide information to construct the framework needed by seeking the qualities that have the most direct effect on organizational performance. Supply base alignment examines and propagates interaction among supply and demand planning. The strongest and most aggressive of said planning starts in procurement with purchasing practices and has several configurations, all with differing impact (Lindgreen, Vanhamme, van Raaij, & Johnston, 2013). This can be observed over the last several decades and the advancements of buyer and supplier relationships. Per Hartmann, Kerkfeld, and Henke (2012), obtaining additional value out of purchasing and supply management is of high importance to senior organizational management.

Schoenherr and Narasimhan (2012) stated the entanglement of dynamic capabilities and performance improvement could be observed as developed from a production management setting. The findings of this study show however, that performance improvement starts in procurement and go along the length of the supply chain. Improved process design, improved product design, and reduced lead time beginning in the planning and strategic phases of procurement. Performance improvement treated as part of the procurement planning process is a way to mitigate risk (Sodhi & Tang, 2012).

Implications of this study for operational performance seen at the service level start with protocols set at the strategic level of procurement. Though this is usually observed as an indirect capability, it is said to establish complex performance (Spring & Araujo, 2014). Interrelated elements, such as infrastructure protocols, boundary practices, and contracting, all work in the framework of procurement management and add to organizational performance.

The evolved view of performance enhance shows the competence of supply side to hold the ability to increase organizational performance. As per the work by Blome et al. (2013), this holds influence with supply chain agility on organizational performance as well as an interconnectedness with the demand side competence. The ability to react and adapt coming to the forefront and enhancing organizational performance.

According to this study, workers have a need to understand how they fit in to both the value chain overall and purchasing in particular. However, this can be observed as a human resources issue, according to Lengnick-Hall et al. (2013); in the supply chain, human resources management is a part of procurement planning. The implication of this

research states that workers who understand where they fit into organizational value chain and procurement planning will deliver higher production and better overall organizational performance.

Limitations

Li et al. (2014) stated that studies, such as this one, could be considered content specific. This study had one hundred and forty participants with eighty-nine stating the organization they worked for, a larger sample size with a more focused question about the 'organization worked for' may have provided more definitive results. The survey being distributed by APICS was a very focused and narrow, future researchers may want to use influencer groups. It is also noted that, even though this research was open to global supply chain professionals, people from only three countries participated, a more diversified study population may additionally give more refined results (Teece, 2017).

Recommendations

It would be highly useful to investigate the interior and exterior procurement protocols effects and outcomes for multi-tier suppliers. There is a need to probe into the interplay between supply chain strategy and procurement strategy. The effect of information systems used in procurement and how it could produce better outcomes across the organization. Moreover, procurement protocols interactions with purchasing practices needs to be explored further to find how to obtain better results.

Conclusion

In Chapter 5, the findings of the study, significance of implications, limitations, and recommendations of the study were presented. This research was completed to consider organizational performance outcomes using dynamic capabilities in the

procurement section of the supply chain. The survey observed management and organizational perspectives through the inter-relationship between dynamic capabilities used in the procurement section of the supply chain. The salient information of the global supply in this study could set strong policy and add to organizational competitive advantage. Teece (2014) stated that the ability to purchase or move production or distribution routes to any point across the globe started in the procurement section of the global supply chain.

The study revealed that the dynamic capabilities of supply base alignment, performance improvement, operational performance, supply side competence, and systems orientation was critical to organizational performance. Although individual capabilities held minimal sway, when the individuals combined to form the dynamic capability, the influence had the most power over organizational performance. The supply side and operational performance were both organizational competences, while performance improvement, supply base alignment, and systems orientation were managerial competences. This literature added to work in supply chain and procurement; it has shown successfully that dynamic capabilities used in the procurement section did have direct effect on organizational performance.

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APPENDIX. THE SURVEY

Gender:

Age:

Country that you live in:

Company you work for:

Supply-side competence

Our supply management delivers the desired performance within our supply chain.

Our supply management meets the operational needs of our business.

Our production management delivers the desired performance within our supply chain.

Our production management meets the operational needs of our business.

Demand-side competence

Our demand management delivers the desired performance within our supply chain.

Our demand management meets the operational needs of our business.

Our distribution management delivers the desired performance within our supply chain.

Our distribution management meets the operational needs of our business.

Process compliance

Our demand management processes are 100% executed and followed by our staff.

Our supply management processes are 100% executed and followed by our staff.

Our production management processes are 100% executed and followed by our staff.

Our distribution management processes are 100% executed and followed by our staff.

Supply chain agility

We can adapt our services and/or products sufficiently fast to new customer requirements.

We can react sufficiently fast to new market developments.

We can react to significant increases and decreases in demand as fast as required by the market.

We are always able to adjust our product portfolio as fast as required by the market.

We can react adequately fast to supply-side changes, e.g., compensate for spontaneous supplier outages, delivery failures, and market shortages.

Operational performance

How would you rank your customer service, in terms of delivering the right quantity and quality at the right time, relative to that of your best competitors?

How would you rank your supply chain cost performance relative to your best competitors?

How would you rank your supply chain service level performance relative to your best competitors?

How would you rank your supply chain flexibility relative to your best competitors?

Internal Stakeholder Alignment

How well do you agree with the following about purchasing within your firm?

SP1: Purchasing professionals' development focuses on the elements of the competitive strategy.

SP2: The purchasing function has a good knowledge of the firm's strategic goals.

SP3: Purchasing performance is measured in terms of its contribution to the firm's success.

SP4: Purchasing is included in the firm's strategic planning process.

Systems Orientation

How well do you agree with the following about the purchasing process within your firm?

SS1: All activities that take place in the purchasing process are clearly defined.

SS2: We understand how our work fits into the value chain of the purchasing process.

SS3: We have a good sense of the interconnectedness of all parts of the purchasing process.

SS4: We understand where all activities fit in the purchasing process.

Supplier Agility

To what extent do the following describe characteristics of your key suppliers?

SBF1: Responsiveness to our schedule delivery changes without excessive cost penalties.

SBF2: Responsiveness to our schedule volume changes without excessive cost penalties.

SBF3: Ability to accept late "mix" changes in orders.

SBF4: Modularization of supplier products.

Supply Base Alignment

How well does purchasing carry out the following with its key suppliers?

SD1: Assessment of supplier's performance through formal evaluation, using established guidelines & procedures.

SD2: Use of a supplier certification program to certify supplier's quality, thus making incoming inspection unnecessary.

SD3: Site visits by your firm to supplier's premises to help supplier improve its performance.

SD4: Inviting supplier's personnel to your site to increase its awareness of how its product is used.

SD5: Training/education of the supplier's personnel.

Performance Improvement

How well do you agree with the following about the performance from your key suppliers in the last 2 years?

BPI1: Improved product design performance.

BPI2: Improved process design.

BPI3: Improved product quality.

BPI4: Reduced lead time.

Charts and Tables

Chart A - Dynamic Capabilities Concepts Table

Author	Type	Function	Areas of application	Outcomes
Teece, Pisano and Shuen, 1997	Capacity	To integrate and reengineer the existing external and internal practices/ Mostly used in a swiftly changing environment.	Mostly found in the process of organizations that are determined by the assets and the changes that might have been adopted in the past.	Sustainable competitive advantage Where there is a direct relationship between the practices and Dynamic Capabilities of an organization
Eisenhardt & Martin, 2000	Business processes and strategy routines.	For Integration, reconfiguration, and release resources in fast paced markets that are dynamic.	It is usually repeated for experience purposes and learning from mistakes	DCs are essential. Are sufficient for gaining a competitive advantage
Zollo and Winter, 2002	It is learned, stable pattern for collective activities.	To effectively modify the operational practices of an organization. Used mostly in changing environments with consideration to the other ones.	DCs have a role of promoting learning mechanisms in the firm	There is a connection between DCs and the survival of an organization.
Winter, 2003	Capability (routine)	For extension and modification of ordinary capabilities in fast paced environments.	Learning mechanisms	Other types of costs make dynamic capabilities not necessarily advantageous

The above table outlines the researches that have been done in the analysis of various organizational supply chains. The outcomes of the supply chain are also explained in the table.