Spring 6-2019

Impact of supply chain design on the relationships between strategy type, firm performance, and supply chain outcomes

Kyle Pudenz
depaul

Impact of Supply Chain Design on the Relationships Between Strategy Type, Firm Performance, and Supply Chain Outcomes

Kyle Pudenz

DePaul University

DISSERTATION

Submitted as partial fulfillment of the requirements
for the degree of Doctor of Business Administration
Kellstadt Graduate School of Business
DePaul University
2019

DEFENSE COMMITTEE:
Dr. Zafar Iqbal, Chair and Advisor
Dr. Nezih Altay
Dr. Rich Rocco

Acknowledgements

First, I would like to thank my dissertation chair, Dr. Zafar Iqbal. Initially, Dr. Iqbal helped shape my broad interest in corporate strategy and supply chain design into a specific focal area of research. He then continued to provide a wealth of knowledge, constructive feedback, and support throughout this process, ensuring that I met key milestones along the way. I would also like to thank my dissertation committee members, Dr. Nezih Altay and Dr. Rich Rocco, for their guidance throughout this process. And while not on my committee, Dr. Grace Lemmon has been a tremendous resource as I completed the statistical analysis portion of the dissertation.

I also owe a great deal of thanks to many of my professional colleagues. First, my immediate work teams at H. D. Smith and AmerisourceBergen have provided continuous encouragement throughout this three-year endeavor. They have often listened to the new ideas I have learned during this educational process and anxiously awaited to see when I would try to apply the new concept at work. At times this application worked well, while at other times much was left to be desired. I am extremely grateful to these colleagues and my broader professional network for always answering the call to complete surveys or to be interviewed.

On a personal level, I want to thank my friends Heather and Jim Sarra along with Kate and Mike Wagener. From the occasional glass of wine to dinners and card nights, this group on Turtle Bay provided plenty of diversions and reminders to enjoy the journey. To my husband, Brian, I am most grateful. While managing a career of his own, Brian assumed even more of the household and parenting responsibilities for our two boys, Kellan and Brennan. For all those late nights, long weekends, and missed vacations, Brian has sacrificed a great deal so that I could pursue this academic and professional dream. I will forever be in debt to all these people for supporting me throughout this incredibly rewarding journey.

Biography

Kyle Pudenz has 15 years of supply chain management experience in manufacturing and distribution companies. Professionally, Kyle is a proven leader with a focus on evidence-based, data-driven decision making to optimize customer service and resources throughout the supply chain. Currently, Kyle works for AmerisourceBergen, a pharmaceutical wholesale company headquartered in Conshohocken, PA. A member of the Strategic Global Sourcing team, Kyle serves as the VP, Manufacturer and Data Services, and as the Managing Director of the satellite office located in Bern, Switzerland. In this capacity, Kyle focuses on data services for global pharmaceutical manufacturer partners, management of the generic formulary, communications, legal, HR, business operations, and finance.

Kyle holds a Bachelor of Science from Duke University and an MBA from the University of North Carolina at Greensboro. In addition to earning a Lean Green Belt, Kyle also holds several certifications from the Association of Supply Chain Management: Certified in Production and Inventory Management (CPIM), Certified Supply Chain Professional (CSCP), Certified in Logistics, Transportation, and Distribution (CLTD), and Supply Chain Operations Reference (SCOR) Professional. Additionally, Kyle is scheduled to complete his Doctorate of Business Administration at DePaul University's Kellstadt Graduate School of Business in June of 2019.

On a personal note, Kyle has been married to his husband, Brian, since 2009. Together, they adopted their sons Kellan (aged 9 years) and Brennan (aged 8 years) from the Democratic Republic of Congo. In his leisure time, Kyle enjoys running outdoors, spending time on the water, snow skiing, reading science fiction, playing games, and traveling with his family.

Table of Contents

List of Tables 7
List of Figures 9
Abstract 10
Introduction 11
Literature Review 14
Strategy Typology 14
Resource-Advantage Theory 17
Supply Chain Design 18
Supply Chain Outcomes 20
Hypothesis Development 22
Business Unit Strategy and Supply Chain Design 22
Supply Chain Design and Firm Performance 27
Supply Chain Design and Supply Chain Outcomes 30
Method 33
Data Collection 33
Measures 34
Organizational Profile and Control Variables 34
Firm Strategy Type 35
Supply Chain Design 36
Supply Chain Outcomes 37
Pilot Survey 39
Sample 39
Analysis 41
Results 42
Descriptive Statistics 42
Factor Analysis & Cronbach's Alpha Reliabilities 45
Independent Variables 45
Mediating Variables 48

Dependent Variables 49
Control Variables 52
Regression Analysis 53
Relationships between Corporate Strategy and Supply Chain Design 54
Influence of Supply Chain Design on Corporate Strategy and Performance 59
Relationship between Supply Chain Design and Supply Chain Outcomes 63
Discussion 69
Summary of Significant Results and Theoretical Implications 70
Summary of Non-Significant Results and Reasoning 72
Strategy and Supply Chain Design 72
Supply Chain Design Influence on Relationship Between Strategy and Performance 73
Supply Chain Design and Supply Chain Outcomes 74
Practical Implications 77
Limitations 78
Future Research Directions 81
Conclusion 83
References 85
Appendix A. Organizational and Personal Profile Survey Questions 91
Appendix B. Perceived Firm Performance Survey Questions 93
Appendix C. Control Variables: Environmental Volatility, Competitive Intensity & Environmental Munificence Survey Questions 94
Appendix D. Strategic Orientation Multi-Item Scale Survey Questions 95
Appendix E. Supply Chain Design Survey Questions 101
Appendix F. Supply Chain Outcomes Survey Questions 103
Appendix G. Power Analysis 106
Appendix H. Descriptive Statistics 107
Appendix I. Component Factor Analysis 112
Independent Variables 112
Mediating Variables 116
Dependent Variables 118

Control Variables 121
Appendix J. Correlation Table 122
Appendix K. Full Regression Results for Hypotheses 123
Hypothesis 1 123
Hypothesis 2 126
Hypothesis 3 130
Hypothesis 4 131
Hypothesis 5 133
Hypothesis 6 134
Hypothesis 7 137
Hypothesis 8 138
Hypothesis 9 139
Hypothesis 10 142
Hypothesis 11 148

List of Tables

Table 1. Strategy Archetype Measures 36
Table 2. Supply Chain Design Measures 37
Table 3. Supply Chain Outcome Measures 38
Table 33. Summary of Results for Hypotheses 1 through 4 59
Table 38. Summary of Results for Hypotheses 5 through 8 63
Table 54. Summary of Results for Hypotheses 9 through 11 69
Table 4. Strategy Archetype – *Defender* Factor Analysis 112
Table 5. Strategy Archetype – *Prospector* Factor Analysis 113
Table 6. Strategy Archetype – *Analyzer* Factor Analysis 114
Table 7. Strategy Archetype – *Reactor* Factor Analysis 115
Table 8. Supply Chain Design – *Leagile* Factor Analysis 116
Table 9. Supply Chain Design – *Lean* Factor Analysis 117
Table 10. Supply Chain Design – *Agile* Factor Analysis 117
Table 11. Firm Performance – *Market Share Gains* Factor Analysis 118
Table 12. Firm Performance – *Profitability* Factor Analysis 118
Table 13. Firm Performance – *Performance* Factor Analysis 118
Table 14. Supply Chain Outcomes – *Reliability* Factor Analysis 118
Table 15. Supply Chain Outcomes – Responsiveness Factor Analysis 119
Table 16. Supply Chain Outcomes – *Agility* Factor Analysis 119
Table 17. Supply Chain Outcomes – *Costs* Factor Analysis 120
Table 18. Supply Chain Outcomes – *Asset Management Efficiency* Factor Analysis 120
Table 19. *Environment* Factor Analysis 121
Table 20. Correlation Table 122
Table 21. Linear Regression Results for Hypothesis H_{1A} 123
Table 22. Linear Regression Results for Hypothesis H_{1B} 124
Table 23. Linear Regression Results for Hypothesis H_{1C} 125
Table 24. Linear Regression Results for Hypothesis H_{2A} 126
Table 25. Linear Regression Results for Hypothesis H_{2B} 127
Table 26. Linear Regression Results for Hypothesis H_{2C} 129
Table 27. Linear Regression Results for Hypothesis H_{3A} 130
Table 28. Linear Regression Results for Hypothesis H_{3B} 130
Table 29. Linear Regression Results for Hypothesis H_{3C} 131
Table 30. Linear Regression Results for Hypothesis H_{4A} 131
Table 31. Linear Regression Results for Hypothesis H_{4B} 132
Table 32. Linear Regression Results for Hypothesis H_{4C} 132
Table 34. Mediation Test Results for Hypothesis 5 133

Table 35. Mediation Test Results for Hypothesis 6 134
Table 36. Mediation Test Results for Hypothesis 7 137
Table 37. Mediation Test Results for Hypothesis 8 138
Table 39. Linear Regression Results for Hypothesis H_{9A} 139
Table 40. Linear Regression Results for Hypothesis H_{9B} 139
Table 41. Linear Regression Results for Hypothesis H_{9C} 140
Table 42. Linear Regression Results for Hypothesis H_{9D} 141
Table 43. Linear Regression Results for Hypothesis H_{9E} 142
Table 44. Linear Regression Results for Hypothesis H_{10A} 142
Table 45. Linear Regression Results for Hypothesis H_{10B} 143
Table 46. Linear Regression Results for Hypothesis H_{10C} 144
Table 47. Linear Regression Results for Hypothesis H_{10D} 145
Table 48. Linear Regression Results for Hypothesis H_{10E} 147
Table 49. Linear Regression Results for Hypothesis H_{11A} 148
Table 50. Linear Regression Results for Hypothesis H_{11B} 148
Table 51. Linear Regression Results for Hypothesis H_{11C} 149
Table 52. Linear Regression Results for Hypothesis H_{11D} 150
Table 53. Linear Regression Results for Hypothesis H_{11E} 151

List of Figures

Figure 1. Proposed Theoretical Model..... 33
Figure 2. Power analysis indicating effect size that can be detected with a sample size of 95 (Faul, Erdfelder, Buchner, & Lang, 2009). 106
Figure 3. Position titles of respondents. 107
Figure 4. Respondents' degree of understanding of their organizations' various strategies. 107
Figure 5. Industry profile using categories from the United States Department of Labor and Statistics. 108
Figure 6. Size of firms based on number of employees. 108
Figure 7. Size of firms based on annual revenue. 109
Figure 8. Geographical scope of the business unit. 110
Figure 9. Location of corporate headquarters. 110
Figure 10. Location of business unit headquarters. 111

Abstract

While the impacts of corporate strategy and supply chain design on firm performance have been independently studied, the role of supply chain design as an integrated element of corporate strategy is not well understood. This study aims to understand whether alignment between an organization's strategy type and supply chain design positively impacts financial performance and supply chain outcomes. The study design involved a quantitative survey of 95 management professionals knowledgeable about their corporate strategy, supply chain design, and firm performance. Firm performance was measured in financial terms of perceived profitability and market share gains as well as through use of an adapted perception scale measuring Supply Chain Operations Reference (SCOR) model metrics. The results demonstrated that firms pursuing certain corporate strategies typically select specific supply chain designs. Further, certain supply chain designs have significant relationships with financial measures and drive targeted supply chain outcomes as measured by SCOR. However, the results did not confirm that these supply chain designs broadly convey the impact of corporate strategy to the firm performance measures of profitability and market share gains. In addition, this study provides empirical evidence that agile and leagile supply chain designs convey the effects of strategy to the supply chain outcome of *Agility*. More research must be done to clearly understand what combinations of corporate strategy and supply chain designs generate the targeted financial and supply chain outcomes.

Introduction

The impact of business unit strategy on business unit performance has been well studied. Forty years ago, Miles, Snow, Meyer, and Coleman (1978) used strategic choice perspective to develop a strategy typology that reflects managerial targeting of specific customers, the technology used to create products and services, and the appropriate administrative structure and processes used to sustain the organization and deliver products and services to customers. These choices determine whether organizations focus internally on efficient creation of products or services, externally through maximization of market opportunities, or by adopting aspects of both approaches (Miles et al., 1978).

One such strategic choice concerns management's design of the supply chain — a term for procurement, operations, and distribution (Carter, Rogers, & Choi, 2015) — that emerged in business practice (Oliver & Webber, 1982) and academia (Ellram & Cooper, 1990; Jones & Riley, 1985) in the 1980s. Initial practices sought to maximize traditional supply chain metrics independently of the broader firm strategy, leading to a deterioration of overall firm performance (von Massow & Canbolat, 2014). Three decades later, firms increasingly leverage their supply chains to create sustainable competitive advantages that support their overall goals (Melnyk, Narasimhan, & DeCampos, 2014). Indeed, an examination of firms showed that those with the best supply chain practices earned an average return of 17.89% in 2007 compared with an average return of only 6.43% for all companies listed on the Dow Jones Industrial Average (CNBC, 2008). Further, a meta-analysis of 80 empirical studies found supply chain integration has a significant, positive correlation with customer-oriented, demand-side metrics related to satisfaction, trust, and commitment (Leuschner, Rogers, & Charvet, 2013). Performance in these demand-side areas may confer future financial benefits (Guo, Kumar, & Jiraporn, 2004) as well.

Increasingly, though, stakeholders of a firm require more from management than delivering on financial metrics alone. To successfully arrive at a broader range of targeted outcomes, firms must first understand customer needs and then design the supply chain to support those requirements (Melnyk, Davis, Spekman, & Sandor, 2010). Fisher (1997) proposed a model that suggests firms implement either lean or agile supply chains based on product characteristics such as stage of life cycle, stability of demand, contribution margin, and product variety. The degree to which firms incorporate aspects of each design type will drive varying supply chain outcomes. Five such outcomes – reliability, responsiveness, agility, costs, and asset management efficiency – assess an organization's ability to predictably perform tasks within expectations, its speed at performing tasks and delivering products to customers, its adaptability to external influences to sustain a competitive advantage, its management of supply chain costs, and its asset management efficiency (APICS, 2017).

While the individual linkages have been explored, no study has firmly established either the theoretical or empirical relationships between the Miles et al. (1978) strategy typology, supply chain design, and firm performance as measured by financial metrics and supply chain outcomes. One promising theory that provides a unifying framework for these four dimensions is Resource-Advantage (R-A) theory. R-A theory is an evolutionary process theory developed across marketing, management, economics, ethics, and general business (Hunt & Davis, 2008) that bridges demand-side perspective with the resource-based view (RBV) of the firm (Hunt & Davis, 2012). From the demand-side perspective, R-A theory elevates the role of the customer (Priem & Swink, 2012) in attaining superior financial performance by stressing the importance of identifying and targeting market segments with innovative ways of addressing those segments' wants and needs (Hunt & Davis, 2008, 2012). This couples with the central tenet of

RBV that firms seeking a sustainable competitive advantage must have the ability to acquire, control, and deploy valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991). The resulting end-to-end view suggested by R-A theory requires consideration of a firm's supply chain as an inimitable resource capable of providing a sustainable competitive advantage (Priem & Swink, 2012) over its more reactive rivals (Mason-Jones & Towill, 1999).

Using R-A theory as the underlying theoretical framework, this research seeks to determine if the connection between strategy type and performance exists and to what degree that connection is influenced by the supply chain design. Further, this research will provide insight as to those combinations of strategy types and supply chain designs that will more likely result in the targeted outcomes. As stakeholders of an organization seek more than pure financial performance alone, understanding what outcomes are delivered by each combination of corporate strategy and supply chain design becomes vital to mangers aiming to reach strategic objectives. This knowledge will allow managers to more appropriately design not only the supply chain but broader structure and processes that create strategic competitive advantages.

Research Question 1: Does business unit strategy drive supply chain design?

Research Question 2: Does supply chain design impact firm performance?

Research Question 3: Does supply chain design determine supply chain outcomes?

Literature Review

Academics in the field of business research have only recently arrived at the common definition for the term strategy. Specifically, strategy refers to the dynamics in which a firm makes rational use of its resources to achieve its goals or improve its performance relative to its environment (Ronda-Pupo & Guerras-Martin, 2012). Taken from the classical Greek word "strategos," meaning the general in command of an army, the concept was only introduced to business in the 1920s when the Harvard Business School began offering business policy courses (Hambrick & Chen, 2008). Initially focused on firm performance, the field intersected with economics, sociology, and marketing (Nag, Hambrick, & Chen, 2007). Over the next four decades, management treatises focused on neoclassical economic theories of the firm (Hunt & Davis, 2012) to explain the relationship between a firm's performance, its special competencies, and deployment of its resources (Hoskisson, Wan, Yiu, & Hitt, 1999). These theories include the seminal concepts that organizational structure follows strategy (Chandler, 1962), organizations have distinctive competencies (Selznick, 1957), and that firms are bundles of productive resources whose differences lead to the unique characteristics of each firm (Penrose, 1959).

Strategy Typology

By the late 1970s, strategy research shifted from the internal workings of the firm to an external perspective of industry structure and competitive positioning of the firm (Hoskisson et al., 1999). As part of this evolution, Miles et al. (1978) put forth a strategy typology that classifies firms across multiple industries according to how each strategic business unit aligns its managerial processes and capabilities with its environment (Desarbo, Di Benedetto, Song, & Sinha, 2005). As an alternative to these strategies, Porter introduced his Five Forces model to explain firm profitability in terms of industry competitiveness (Porter, 1979, 1980). The Five

Forces model emphasizes actions firms can take to create defensive positions against competitive forces within an industry, including barriers to entry, power of suppliers, power of buyers, threat of substitutes, and rivalry among existing competitors (Porter, 2008). These actions focus on creation of a sustainable competitive advantage through cost leadership, differentiation, or focus within a niche market (Porter, 1980).

While Porter's generic strategies show congruence with those of Miles et al. (1978), the strategic choice perspective that underlies the Miles et al. (1978) typology accounts for the critical nature that managers' choices have on firms' structures and processes beyond those described by Porter (Segev, 1989). These choices concern three phases of organizational evolution: the entrepreneurial problem, the engineering problem, and the administrative problem (Miles et al., 1978). Initially, firms must address the entrepreneurial problem and progress from the initial conception of the business to a specific good or service with a target market or market segment. Then, managers must tackle the engineering problem and choose the specific technology to convert inputs to outputs. Finally, managers develop an administrative system with the appropriate organizational structure and processes that facilitate execution of prior strategic decisions. All the while, this same system established to entrench successful approaches must also support future innovative activities (Miles et al., 1978). As a relatively simple framework with intuitive understanding, the model continues to receive support due to its demonstrated validity across multiple industries and cultures (Desarbo et al., 2005).

Miles et al. (1978) defined four strategic archetypes based on how organizations consistently address the three problems: *Defenders*, *Prospectors*, *Analyzers*, and *Reactors*. *Defenders* prefer stability, mechanistically producing a limited set of products directed at a narrow segment of the total potential market. These firms typically abstain from spending

significant resources developing either new products or new markets, instead focusing on improving processes and efficiently manufacturing or delivering services at the lowest possible costs (Desarbo et al., 2005). While quite effective in industries with little change, firms employing this approach lack the ability to locate and exploit new areas of opportunity as the market undergoes major shifts (Miles et al., 1978). At the other extreme, *Prospectors* often drive change in an industry through exploration of new products and markets (Desarbo et al., 2005). This position requires a more flexible approach, leading *Prospectors* to avoid long-term commitments to a single technology so as to maximize the potential of effectively identifying and taking advantage of new approaches and markets (Miles et al., 1978). Consequently, *Prospectors* risk low profitability due to the relative inefficiencies and overextension of resources in the relentless quest for new pursuits. As a more moderate strategic archetype, *Analyzers* attempt to balance the approaches of *Defenders* and *Prospectors*. This position allows *Analyzers* to benefit from the cost efficiencies of managing a core set of products and customers while also realizing higher margins associated with innovative products and markets made possible through an adaptive, flexible model (Desarbo et al., 2005). Just as *Analyzers* reap the reward of the more extreme position, they experience the disadvantages of both as well. For this reason, *Analyzers* risk the ineffectiveness of *Defenders* and inefficiencies of *Prospectors* if they fail to administratively differentiate structures and processes that support both stable operations for the core business and innovation in rapidly changing markets (Miles et al., 1978).

The fourth group, *Reactors*, precipitates from poorly executed attempts to implement the other three strategies. Trapped in a perpetual cycle of inconsistent and unstable responses to changes in the market, *Reactors* fail to align strategy with technology, structure, and processes (Miles et al., 1978). *Reactors* may result from a variety of management failures related to

articulating the strategy, implementing the structure and processes required to support the strategy, or adjusting either the strategy or structure in the face of significant environmental changes (Miles et al., 1978). In turn, these struggling organizations lack a clear strategic orientation, the ability to implement policy, or even a well-developed process for making decisions (Conant, Mokwa, & Varadarajan, 1990). Ultimately, this inability to capitalize on the firm's capabilities and shifting focus places the firm at a distinct disadvantage to those firms that consistently follow one of the first three strategy types (Desarbo et al., 2005).

Resource-Advantage Theory

While Miles et al. (1978) provide a parsimonious description of general strategies firms employ, additional theory is required to explain how these organizations amass and align their resources and capabilities to compete in the market. Resource-advantage (R-A) theory provides this linkage as an evolutionary process theory developed across marketing, management, economics, ethics, and general business (Hunt & Davis, 2008). The theory builds on the resource-based view of the organization, providing a bridge between the resource and demand-side perspectives (Hunt & Davis, 2012). Consequently, a full understanding of R-A theory cannot be attained without first detailing its foundational components.

The first layer of the foundation is the resource-based view of the firm (RBV). Research into RBV currently dominates the strategy literature (Priem, Li, & Carr, 2012). RBV emphasizes a firm's strengths and weaknesses relative to external opportunities and threats (Hoskisson et al., 1999). The central tenet of RBV is that firms seeking a sustainable competitive advantage must have the ability to acquire, control, and deploy valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991). Additionally, these resources and capabilities should be fairly immobile or unable to be traded at all (Peteraf, 1993). RBV further assumes that

resources are heterogenous and the market is homogeneous, highlighting the advantage of firms with superior abilities to pick and efficiently bundle appropriate resources (Priem et al., 2012).

The second foundational layer of R-A theory concerns the demand-side perspective. Firms focused on demand responsiveness recognize that the consumer's evaluation of benefits determines the extent of value creation (Priem, Butler, & Li, 2013). Executives can maximize value creation by identifying and appropriately responding to the heterogenous and dynamic nature of consumer demand, often creating a sustainable competitive advantage and superior performance using mundane resources (Priem et al., 2013). Similar to the demand-side perspective, R-A theory elevates the role of the customer and assumes heterogenous, dynamic demand with imperfect competition (Priem & Swink, 2012). As such, firms should also identify and target market segments with innovative ways of addressing those segments' wants and needs (Hunt & Davis, 2008, 2012) in pursuit of sustainable competitive advantages and superior financial performance relative to rivals (Hunt & Davis, 2008; Ramsay, 2001).

Supply Chain Design

Organizations focused on differentiating themselves through operational excellence can unify efforts through supply chain design. Indeed, the bundled resources and capabilities described by RBV and R-A theories may include internally developed supply chain functions, insofar as the firm extracts greater value from the bundled resources than can competing firms (Barney, 2012). As a function, supply chain management aims to provide the most appropriate and competitive mix of products to the final consumer (Carter et al., 2015). This aggregate label for procurement, operations, and distribution (Carter et al., 2015) entered the lexicon in the 1980s (Ellram & Cooper, 1990; Jones & Riley, 1985; Oliver & Webber, 1982). During this era, organizations combined these formerly disparate functions under the umbrella of supply chain

management and optimized this new silo independently of the broader firm strategy. Consequently, the purchasing function continued to select suppliers based simply on cost, delivery speed, and quality (Melnyk et al., 2010). While these choices maximized traditional supply chain metrics, the disconnection with the overall strategy led to misaligned resources and waning firm performance (von Massow & Canbolat, 2014). Further, the singular focus on low cost also meant other firms could quickly replicate newfound savings and deny a sustainable competitive advantage over the long-term (Melnyk et al., 2010).

Several firms recognized that their supply chains could serve a critical role in achieving their competitive goals (Melnyk et al., 2014). In 2007, firms with the best supply chain practices more than doubled the average return of all companies listed on the Dow Jones Industrial Average (CNBC, 2008), while a meta-study found that supply chain integration has a significant, positive correlation with firm performance (Leuschner et al., 2013). Supply chain integration does not always confer immediate financial rewards, though, as firms must initially invest heavily to facilitate customer and supplier integration. Even so, improved relations and the resulting information exchanges between firms within these value chains drive long-term performance gains in delivery performance, quality, and innovation as well as customer-oriented metrics related to satisfaction, trust, and commitment (Leuschner et al., 2013). Elevated performance in these customer-focused areas can deliver future financial benefits (Guo et al., 2004) and provide a sustainable competitive advantage.

Organizations that strategically design and adapt their supply chains to their products and services to proactively address the needs of their customers will find a competitive advantage over their more reactive rivals (Mason-Jones & Towill, 1999). In his seminal work, Fisher (1997) proposed a model that classifies each product type as either functional or innovative

based on the length of its product life cycle, contribution margin, product variety, average margin of forecast error, average stock-out rate, average end-of-season markdown, and lead time for make to order options. This model also suggests that lean or efficient supply chains are most appropriate for functional products due to their more stable demand and low contribution margins (Mason-Jones, Naylor, & Towill, 2000), a prediction that has found empirical support (Selldin & Olhager, 2007). Further, the model proposes that agile or responsive supply chains are best suited to innovative products with shorter life cycles, higher product variety, and higher contribution margins (Mason-Jones & Towill, 1999), although this particular prediction finds no empirical support (Lo & Power, 2010).

While Fisher's (1997) model requires that supply chains be characterized as efficient or responsive, firms often implement an alternative approach that includes aspects of lean and agile at different ends of the supply chain (Lo & Power, 2010). In this model, lean processes govern upstream supplier-facing activities while agile principles regulate downstream events closer to customers (Lo & Power, 2010; Mason-Jones et al., 2000). Termed "leagile", this supply chain strategy allows for efficient manufacturing processes characterized by level production and waste elimination. This strategy also provides the capability of effectively responding to volatile customer demand (Naylor, Naim, & Berry, 1999).

Supply Chain Outcomes

As the role of the supply chain in delivering firm performance continues to elevate, firms have transitioned from strategically decoupled supply chains based solely on price to strategically coupled supply chains that strive to deliver value (Melnyk et al., 2010). To build an effective supply chain, though, requires understanding both the marketplace and the drivers of customer satisfaction (Mason-Jones et al., 2000). These drivers, in turn, lead to a blend of

outcomes tailored to meet those customer needs (Melnyk et al., 2010). While the traditional view of strategy suggests that trade-offs must be made, firms often combine competitive strategies to mimic a core competence (Lo & Power, 2010). Some combinations prove complementary as firms leverage practices developed to support one capability for another (Melnyk et al., 2010), creating a self-reinforcing system that competitors cannot quickly emulate (Porter, 1996).

To assess targeted outcomes, the practitioner-influenced Supply Chain Operation Reference (SCOR) model provides standardized measures that allow organizations to benchmark their performance. Developed in 1996, the SCOR model maps the business activities associated with fulfilling customer demand and serves as a strategy, performance management, and process improvement diagnostic tool for supply chain management (Lambert, 2008). The model consists of four sections that review processes, practices, people, and performance. The performance section of the model contains a hierarchical structure of metrics related to five key supply chain attributes: reliability, responsiveness, agility, costs, and asset management efficiency (APICS, 2017). The first attribute, reliability, assesses the ability to perform tasks within expectations, focusing on the predictability of the outcome of a process. Responsiveness, the second attribute, assesses how quickly tasks are performed and measures the speed at which products are delivered to customers. Next, agility refers to how well an organization responds to external influences in order to sustain a competitive advantage in the changing marketplace. The fourth attribute, costs, pertains to the financial outlays necessary to pay for the labor, material, transportation, and management required to operate the supply chain processes. Finally, asset management efficiency measures how well an organization uses its assets (APICS, 2017). These metrics of supply chain outcomes are readily recorded, captured, and benchmarked by organizations subscribing to the APICS body of knowledge for their supply chain needs. Further,

these measures both assess many of the aspects described by the Miles et al. (1978) strategic types while capturing multiple dimensions of supply chains described as lean, agile, and leagile.

Hypothesis Development

Fundamentally, strategy aims to align a firm's resources to achieve its goals and improve performance (Ronda-Pupo & Guerras-Martin, 2012). In this regard, Miles et al. (1978) suggest that firms choosing *Defender*, *Prospector*, or *Analyzer* strategies are likely to perform equally as well, so long as they consistently pursue the selected strategy type. However, the inconsistent focus and poor execution of *Reactors* will result in poorer performance when compared to the other three strategy types (Desarbo et al., 2005). While Miles et al. (1978) focused on financial performance, the contemporary view of the firm expands this perspective to include supply chain metrics that assess the firm's ability to meet customer needs. Unfortunately, though, no study has clearly provided the framework that connects a firm's chosen strategy type, the selected supply chain design, financial performance, and targeted supply chain outcomes. This research seeks to determine the strength of the connections between these key constructs.

Business Unit Strategy and Supply Chain Design

The Miles et al. (1978) strategy archetypes reflect managers' choices as to the specific customers targeted by the firm, the technology used to create the offered products and services, and the appropriate administrative structure and processes used to sustain the organization and deliver the products and services to customers (Miles et al., 1978). Each decision attempts to create a competitive advantage that will more favorably position the firm relative to its rivals within the industry. One competitive advantage centers around strategically adapting an

organization's supply chain to its products and services to fit customer needs, providing superior performance than more reactive rivals (Mason-Jones & Towill, 1999). As suggested by Resource-Advantage theory, this specific adaptation of the supply chain to customer needs reflects a linkage between the firm's bundle of valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991) to its customers' dynamic demand and often imperfect competition (Priem & Swink, 2012). When well-designed, the supply chain generates customer satisfaction through focus on the "Seven R's" (Mentzer, Flint, & Kent, 1999): having the *right* product in the *right* condition and *right* quantity at the *right* place and *right* time for the *right* customer at the *right* price (Ross & Rogers, 1996).

Fisher's model (1997) matches products with the appropriate type of supply chain based on the degree of certainty of demand. Fisher (1997) classifies products as either commodities or fashion, with commodities having a more predictable sales pattern and fashion items having characteristically unstable demand. Commodities are best served by efficient supply chains (Fisher, 1997) with lean value streams that prioritize reliability and waste reduction to achieve the lowest cost (Naylor et al., 1999). In contrast, fashion items are best served by responsive supply chains (Fisher, 1997) that primarily emphasize an agile response (Naylor et al., 1999) over cost considerations (Lo & Power, 2010).

As stipulated in Resource-Advantage theory, many firms target market segments and developed innovative ways of addressing those segments' dynamic requirements in efforts to drive superior financial performance (Hunt & Davis, 2008, 2012). Achievement of these goals often requires a dual emphasis on flexibility and efficiency, leading firms to implement elements of both lean and agile supply chains in a hybrid solution known as "leagile" (Naylor et al., 1999). In this system, firms employ an efficient, lean methodology for back-end processes associated

with production while providing responsive, agile approaches to processes located closer to customers (Mason-Jones et al., 2000). Typically, the two types of supply chains are separated by an inventory decoupling point that buffers the transition between the two disparate approaches (Lo & Power, 2010). While this hybrid approach benefits from the advantages of both supply chains, it does not achieve the extreme returns achieved by either strategy when pursued alone.

Each type of strategy outlined by Miles et al. (1978) naturally aligns with the supply chain designs described by Fisher (1997) and Naylor et al. (1999). Firms choosing a *Defender* strategy aim to "seal off" the total market to create a stable set of products and customers while maintaining stable growth. Administratively, these firms place an emphasis on enforcing strict control of the organization to ensure efficient production and distribution of services to current customers. As a result, these firms typically refrain from investing significant resources to develop new products or new markets, instead focusing on improving processes and efficiently manufacturing at the lowest possible costs (Desarbo et al., 2005). *Defenders'* emphasis on cost leadership benefits from adopting a lean or efficient supply chain while foregoing the added costs associated with more agile capabilities. Since leagile supply chains contain both lean and agile characteristics, *Defenders* will only partially align with a leagile supply chain.

H_{1A}: *The more a firm follows a* Defender *strategy, the more likely the firm will adopt a lean supply chain.*

H_{1B}: *The more a firm follows a* Defender *strategy, the less likely the firm will adopt an agile supply chain.*

H_{1C}: *The more a firm follows a* Defender *strategy, the less likely the firm will adopt a leagile supply chain.*

In contrast, firms choosing a *Prospector* strategy thrive in dynamic environments, focusing on growth through innovation and identification of new market opportunities (Miles et al., 1978). Administratively, these firms place an emphasis on decentralization and avoid commitment to a standard technology and fixed process, instead seeking flexible solutions that enable the firms to differentiate their product lines, exploit opportunities, and take risks (Desarbo et al., 2005). This emphasis on responsiveness and adaptability requires *Prospectors* to forego efficiency in favor of a more agile supply chain to execute their strategy. As with *Defenders*, *Prospectors* only partially align with a leagile supply chain since this hybrid design contains agile elements.

H_{2A}: The more a firm follows a Prospector *strategy, the less likely the firm will adopt a lean supply chain.*

H_{2B}: The more a firm follows a Prospector *strategy, the more likely the firm will adopt an agile supply chain.*

H_{2C}: The more a firm follows a Prospector *strategy, the less likely the firm will adopt a leagile supply chain.*

As a less extreme solution, *Analyzers* attempt to balance the approaches of *Defenders* and *Prospectors* (Miles et al., 1978). While protecting their core base of customers through efficient production and delivery, *Analyzers* monitor the market to identify the latest opportunities opened up by *Prospectors* (Desarbo et al., 2005). Due to the risky nature of this "fast follower" strategy, firms typically choose this option in environments characterized by slow change. They quickly follow *Prospectors* into proven markets and begin supplying the same innovative offering with the efficiency characteristic of *Defenders*. This dual emphasis on efficiency and flexibility

requires *Analyzers* to implement both lean and agile components to effectively execute the overall organizational strategy, all the while not fully embracing the structure and processes of either the lean or agile supply chain designs.

H_{3A}: *The more a firm follows an* Analyzer *strategy, the less likely the firm will adopt a lean supply chain.*

H_{3B}: *The more a firm follows an* Analyzer *strategy, the less likely the firm will adopt an agile supply chain.*

H_{3C}: *The more a firm follows an* Analyzer *strategy, the more likely the firm will adopt a leagile supply chain.*

Finally, *Reactors* might prefer a leagile supply chain that supports their ever-changing transition from one strategy to another. However, by definition, *Reactors* occur not by design, but from failing to consistently follow a single strategy. As a result, firms with a *Reactor* strategy will have no predictable relationship with any single type of supply chain design.

H_{4A}: *There will be no significant relationship between a firm-level* Reactor *strategy and adoption of a lean supply chain.*

H_{4B}: *There will be no significant relationship between a firm-level* Reactor *strategy and adoption of an agile supply chain.*

H_{4C}: *There will be no significant relationship between a firm-level* Reactor *strategy and adoption of a leagile supply chain.*

Typically, a hypothesis predicts the *presence* of a relationship. The null hypothesis, therefore, predicts the absence of the effect, and the statistical tests evaluate whether this null

hypothesis can be rejected. However, the hypotheses surrounding the *Reactor* strategy type predict the *lack* of a relationship. Although somewhat irregular, this type of statistical testing often occurs during clinical drug trials where the focus is to show a lack of an association between a drug and potential side effects. As such, there is established precedence for a hypothesis predicting the absence of a significant relationship.

Supply Chain Design and Firm Performance

Resource-Advantage theory recognizes the heterogenous nature of demand (Priem & Swink, 2012), suggesting that firms creatively address the specific needs of their target markets to drive superior financial performance (Hunt & Davis, 2008, 2012). Firms can do so through the use of a business model, or a set of capabilities configured to enable value creation consistent with strategic economic objectives (Zott, Amit, & Massa, 2011). Stated more simply, a business model is a reflection of a firm's realized strategy (Casadesus-Masanell & Ricart, 2010). As a bridge of strategy formulation and implementation, a business model can explain a firm's competitive advantage and performance (Zott et al., 2011).

An organization's supply chain represents one of the business models through which firms implement their overall strategy to drive value creation. For example, a firm's supply chain team can leverage purchasing volume, lock in suppliers' production output or technology, develop long-term relationships with a core set of partners, and invest in the identification and development of a new supplier base (Ramsay, 2001). Resource-Advantage theory suggests that a supply chain may further distinguish the firm from competitors with varied critical competencies such as the abilities to learn, to innovate, and to respond quickly to market conditions (Hunt & Davis, 2012). As such, R-A theory strongly suggests that the supply chain can serve as a

sustainable competitive advantage for the firm (Priem & Swink, 2012) through this differentiation of its capabilities from competitors.

The creation of a sustainable competitive advantage delivers superior performance for the firm (Porter, 1996). This firm performance is often assessed using financial measures such as profitability or market share gains (Hambrick, 1983; Leuschner et al., 2013; Morgan, Vorhies, & Mason, 2009). Lean, agile, and leagile supply chains all perform well, so long as the selected supply chain design aligns with the overall firm strategy (Agarwal, Shankar, & Tiwari, 2006; Fullerton & Wempe, 2009; Martínez Sánchez & Pérez Pérez, 2005). As such, *Defenders* focused on efficiently producing at the lowest possible costs (Desarbo et al., 2005) best execute their strategy with a lean supply chain as they seek greater profitability and market share gains.

H_{5A}: *The more a firm adopts a lean supply chain design, the more significant the connection between a* Defender *strategy and firm profitability.*

H_{5B}: *The more a firm adopts a lean supply chain design, the more significant the connection between a* Defender *strategy and firm market share gains.*

In contrast, *Prospectors* strive for greater responsiveness as they aim to take advantage of market volatility in their quest for new products or customers. This position lends *Prospectors* to a more adaptive supply chain to realize greater profitability and market share gains.

H_{6A}: *The more a firm adopts an agile supply chain design, the more significant the connection between a* Prospector *strategy and firm profitability.*

H_{6B}: *The more a firm adopts an agile supply chain design, the more significant the connection between a* Prospector *strategy and firm market share gains.*

Analyzers efficiently serve a consistent customer base while maintaining sufficient nimbleness to chase market leaders into new areas. Carefully balancing these two strategies allows *Analyzers* to reap the advantages of both *Defenders* and *Prospectors* (Miles et al., 1978). As such, this strategy requires a dual focus on both efficiency and flexibility, requiring *Analyzers* to adopt aspects of both lean and agile supply chains. This leagile approach positions *Analyzers* to maximize firm performance as measured by profitability and market share gains.

H_{7A}: *The more a firm adopts a leagile supply chain design, the more significant the connection between an* Analyzer *strategy and firm profitability.*

H_{7B}: *The more a firm adopts a leagile supply chain design, the more significant the connection between an* Analyzer *strategy and firm market share gains.*

Reactors fail to consistently commit to a single strategy and therefore will have no predictable choice of a supply chain design. However, given that a leagile supply chain design confers benefits of efficiency and responsiveness, *Reactors* are likely to benefit from a structural capability that allows management to quickly shift direction. While this design may not provide the optimal benefits of a lean supply chain while pursuing a *Defender* approach nor the flexibility of an agile supply chain while functioning as a *Prospector*, the leagile supply chain will at least provide limited functionality for any type of market strategy.

H_{8A}: *The more a firm adopts a leagile supply chain design, the more significant the connection between a* Reactor *strategy and firm profitability.*

H_{8B}: *The more a firm adopts a leagile supply chain design, the more significant the connection between a* Reactor *strategy and firm market share gains.*

Supply Chain Design and Supply Chain Outcomes

Supply chain design impacts firm performance in other areas as well, often measured using non-financial metrics. Success in this area comes from first understanding the needs of key customers and then aligning the supply chain design to generate a mix of outcomes that support those needs (Melnyk et al., 2010). Firms then often create a core competency by combining competitive strategies (Lo & Power, 2010) and leveraging complementary practices that support multiple capabilities (Melnyk et al., 2010). In this vein, organizations often prefer to mix aspects of the two extreme supply chain alternatives, with a lean supply chain providing cost leadership as opposed to a more agile supply chain that supports a flexible operation and facilitates a strategy based on differentiation (von Massow & Canbolat, 2014).

The performance section of the Supply Chain Operations Reference model contains a hierarchical structure of performance metrics related to five key attributes: reliability, responsiveness, agility, costs, and asset management efficiency (APICS, 2017). The first three assess the organization's ability to reliably respond to consumer demands by leveraging supply chains of both the firm and external partners. The first metric, reliability, measures the ability to perform tasks within expectations, focusing on the predictability of the outcome of a process. Second, responsiveness evaluates how quickly tasks are performed and measures the speed at which products are delivered to customers. Next, agility refers to how well an organization responds to external influences during changing conditions. The last two metrics serve as internal measurements of the firm's ability to manage costs and assets. The fourth attribute, costs, pertains to the financial outlays to pay for the labor, material, transportation, and management required to operate the supply chain processes. Finally, asset management efficiency measures how well an organization uses its assets (APICS, 2017).

Given that the various types of supply chains have clear strategies to develop and sustain competitive advantages for the organization, each one should also correlate with certain supply chain outcomes as outlined in the SCOR model. Lean supply chains strive for the lowest cost by creating value streams that prioritize reduction of waste (Naylor et al., 1999). These supply chains are typically associated with products with stable demand and limited volatility (Mason-Jones et al., 2000). With a focus on efficiency, lean supply chains should be reliable, have low costs, and manage assets well. In contrast, lean supply chains should perform relatively poorly in the areas of responsiveness and agility.

H_{9A}: *A lean supply chain design will positively correlate with reliability.*

H_{9B}: *A lean supply chain design will negatively correlate with responsiveness.*

H_{9C}: *A lean supply chain design will negatively correlate with agility.*

H_{9D}: *A lean supply chain design will positively correlate with cost reduction.*

H_{9E}: *A lean supply chain design will positively correlate with asset management efficiency.*

In contrast, agile supply chains best serve markets that have more volatile demand patterns (Naylor et al., 1999). These supply chains focus on meeting customer needs first and foremost, with a much reduced emphasis on cost (Lo & Power, 2010). As the name suggests, agile supply chain designs should perform relatively well on metrics related to agility. Further, agile supply chains will be more responsive than their lean counterparts. This responsiveness will decrease efficiency for the organization, however, and drive reduced reliability, increased cost, and reduced asset management efficiency.

H_{10A}: *An agile supply chain design will negatively correlate with reliability.*

H_{10B}: *An agile supply chain design will positively correlate with responsiveness.*

H_{10C}: *An agile supply chain design will positively correlate with agility.*

H_{10D}: *An agile supply chain design will negatively correlate with cost reduction.*

H_{10E}: *An agile supply chain design will negatively correlate with asset management efficiency.*

Leagile supply chain designs are best suited for those firms wishing to maximize cost-savings for a core, focused group of products and customers while also maintaining some flexibility to pursue proven, emerging markets. Striking this balance requires a dual emphasis on flexibility and efficiency, with lean back-end processes and agile customer-facing approaches (Mason-Jones et al., 2000). This leagile hybrid provides for directionally positive results for all targeted supply chain outcomes, albeit to a lesser degree in any given area than could be achieved by implementing a singularly focused lean or agile design.

H_{11A}: *A leagile supply chain design will positively correlate with reliability.*

H_{11B}: *A leagile supply chain design will positively correlate with responsiveness.*

H_{11C}: *A leagile supply chain design will positively correlate with agility.*

H_{11D}: *A leagile supply chain design will positively correlate with cost reduction.*

H_{11E}: *A leagile supply chain design will positively correlate with asset management efficiency.*

Figure 1 represents the model of the predicted relationships between these constructs.

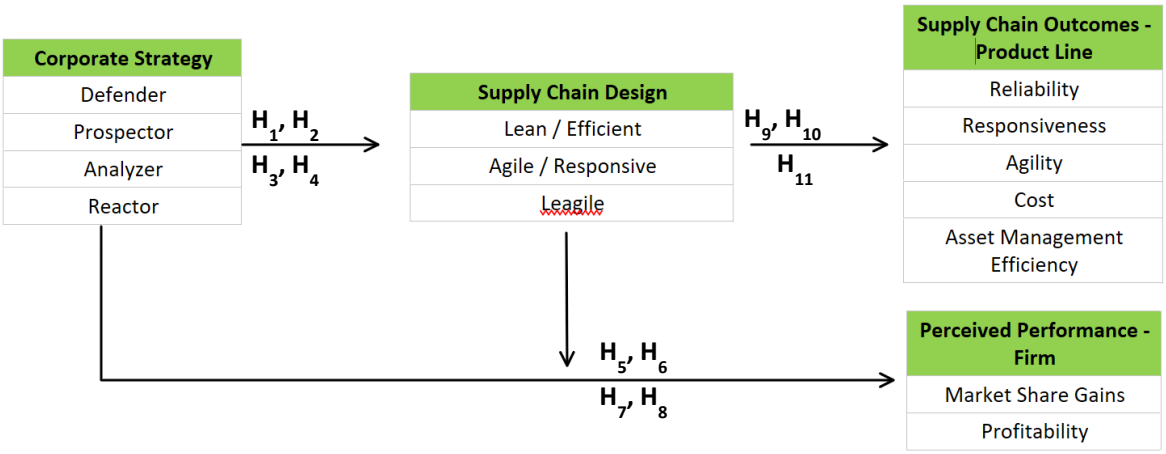

FIGURE 1. PROPOSED THEORETICAL MODEL

Method

Data Collection

To test the quantitative nature of the relationships outlined in the hypotheses, a field survey was distributed. The questionnaire itself contained four sections: organizational profile, firm strategy type, product supply chain design, and product supply chain outcomes. Each section relied on multi-item scales to ensure adequate measurement of each variable. In addition, multiple items throughout the survey were reverse-coded as a means of cross-checking answer validity for each respondent. The survey was administered via social media and email using links to the online platform Qualtrics. Respondents were initially given six weeks to complete the survey, with reminders provided every two weeks. At the end of the six weeks, the survey was further extended for an additional four weeks to recruit additional participants.

Measures

Organizational Profile and Control Variables

The initial survey section collects information on the respondent and the organization. This included information such as respondent's title, tenure with the organization, gender, age, and years of professional experience. Organizational demographics included approximate annual revenue for the firm, approximate annual revenue for the product category, time the organization has spent in current market and technologies, and number of employees. Appendix A includes questions assessing organizational profile and respondent demographics.

In addition, respondents provided perceptual measures of firm profitability and market share gains using an adapted scale from Morgan et al. (2009). Measures of profitability and market share gains mirror financial metrics used in prior research (Hambrick, 1983) as does the use of perceptual measures (Shortell & Zajac, 1990) in lieu of objective measures. See Appendix B for survey questions regarding perceived firm performance in terms of profitability and market share gains.

As respondents provided information about the firm, they also were asked to provide information regarding the industry and environment in which they operate. As observed in prior research, industry explains a significant portion of firm performance (Porter, 1979, 1980). As such, industry effects should be controlled for in order to isolate the portion of firm performance attributable to business unit strategy and supply chain design. Specific control variables measured include environmental volatility, competitive intensity, and environmental munificence. Appendix C includes the 16-question, multi-item scale used to assess these aspects.

Firm Strategy Type

Prior research has employed multiple methods to determine an organization's strategy type. Self-typing, objective indicators, external assessment, as well as investigator inference have all been operationalized previously with varying degrees of success (Snow & Hambrick, 1980). Assessment of previous studies indicates that the use of self-typing of organizational strategy by key informants generates valid results (Shortell & Zajac, 1990). Self-typing can be performed using the paragraph form (Snow & Hambrick, 1980) or multi-item scales (Conant et al., 1990; Segev, 1987; Shortell & Zajac, 1990). Unfortunately, the paragraph form typically only explores two or three of the 11 strategic dimensions that constitute the Miles et al. (1978) model. In contrast, the multi-item scales cover all dimensions and provide a deeper understanding of each firm's chosen strategy type.

To fully capture the full breadth of each strategic archetype, this study operationalized firm strategy type using the multi-item scale developed by Conant et al. (1990). The mean Cronbach's alpha-reliability coefficients for the 11 questions is 0.69 (Conant et al., 1990), suggesting content validity (Nunnally, 1978). Respondents indicated the extent to which they agree with each set of 11 statements for each of the four strategy archetypes (*Defenders*, *Prospectors*, *Analyzers*, and *Reactors*). After respondents read each description, they designated on a 7-point Likert-like scale (with '1' meaning "Strongly Disagree", '4' meaning "Neither Agree nor Disagree", and '7' meaning "Strongly Agree") how well the statement describes their organization. In addition, respondents were asked to what extent their business unit strategy aligns with the strategy used for their product category.

Table 1. Strategy Archetype Measures

Strategy archetype	**Items**	**Definition**
Defender	11	Prefer stability and produce a limited set of products directed at a narrow market segment, focus on improving processes and efficiently manufacturing at the lowest cost.
Prospector	11	Prefer to innovate and disrupt markets, focus on flexibility to quickly create new products and entering new markets.
Analyzer	11	Balance approaches of *Defenders* and *Prospectors*, benefitting from cost efficiencies of managing core set of products/customers while also realizing higher margins from innovative products and markets made possible through an adaptive, flexible model.
Reactor	11	Results from failed attempts to consistently align strategy with technology, structure, and processes, leading to a perpetual cycle of inconsistent and unstable responses to changes in the market.

In addition to self-typing the organizational strategy type, respondents were asked to self-report on their level of understanding of their various strategy elements. These included the corporate strategy, the business unit strategy, and the product category strategy. For each strategy element, respondents indicated how much they agree with the statement, "Please indicate how knowledgeable you are about your strategy," using a 7-point Likert-like scale (with '1' meaning "Strongly Disagree", '4' meaning "Neither Agree nor Disagree", and '7' meaning "Strongly Agree"). Using the same Likert-like scale, respondents also rated their agreement with the statement, "Your product category strategy aligns with your business unit strategy." See Appendix D for the survey questions related to strategy.

Supply Chain Design

To operationalize the supply chain design, respondents answered 17 survey questions to determine how closely their chosen strategy aligns with an efficient or a responsive supply chain. These questions are reflective of Fisher's (1997) statements on supply chain strategy in his

seminal work and are exactly the same as those used in a prior study (Lo & Power, 2010). After reading each description, respondents designated on a 7-point Likert-like scale (with '1' meaning "Strongly Disagree", '4' meaning "Neither Agree nor Disagree", and '7' meaning "Strongly Agree") how well the statement describes the implemented supply chain design for the product category for which they responded. Seven questions (Questions 1, 3, 4, 7, 9, 12, and 13) addressed the degree to which respondents felt their product supply chain designs are lean, whereas ten questions (Questions 2, 5, 6, 8, 10, 11, 14, 15, 16, and 17) pertained to agile supply chain designs. The collective set of 17 questions were used to calculate the leagile score for each supply chain. Appendix E includes all survey questions related to supply chain design.

Table 2. Supply Chain Design Measures

Supply chain design	**Items**	**Definition**
Lean	7	Supply chain that efficiently provides predictable demand at lowest possible cost.
Agile	10	Supply chain that aims to react to customer needs quickly, where cost is not the major consideration.
Leagile	17	Supply chain that combines elements of both lean and agile, with lean processes focused on efficient production and agile processes dedicated to managing orders and delivering product to customers.

Supply Chain Outcomes

The supply chain attributes outlined in the Supply Chain Operations Reference (SCOR) model were used to operationalize the supply chain outcomes. While these higher-level attributes set strategic direction and typically cannot be measured, each attribute has lower-level metrics that assess to what extent each performance attribute is represented within the supply chain under evaluation. To operationalize these SCOR performance attributes, each Level-2 metric was converted to a descriptive statement. As a result, each attribute is represented by a multi-item

scale consisting of between four and eight items. For example, the performance attribute of reliability is assessed with a Level-1 metric of perfect order fulfillment, which itself is a composite score of four Level-2 metrics: percentage of orders delivered in full, the delivery performance to customer commit date, documentation accuracy, and orders delivered in perfect condition (APICS, 2017). During the survey, respondents read each description and then designated on a 7-point Likert-like scale (with '1' meaning "Strongly Disagree", '4' meaning "Neither Agree nor Disagree", and '7' meaning "Strongly Agree") how well the statement describes the supply chain outcomes for their product category. See Appendix F for survey questions related to supply chain outcomes.

Table 3. Supply Chain Outcome Measures

Performance attribute	**Items**	**Definition**
Reliability	4	The ability to perform tasks as expected. Reliability focuses on the predictability of the outcome of a process.
Responsiveness	4	The speed at which tasks are performed. The speed at which a supply chain provides products to the customer.
Agility	8	The ability to respond to external influences, the ability to respond to marketplace changes to gain or maintain competitive advantage.
Costs	8	The cost of operating the supply chain processes. This includes labor costs, material costs, and management and transportation costs.
Asset Management Efficiency (Assets)	5	The ability to efficiently utilize assets. Asset management strategies in a supply chain include inventory reduction and insourcing vs. outsourcing.

Pilot Survey

Prior to formally issuing the questionnaire, the survey was first sent to 30 respondents. Potential participants were offered a chance to win one of two $50 electronic gift cards to Amazon for successfully completing the questionnaire. Of the 20 total responses received, 16 complete answers were analyzed. In terms of response time, the minimum response was 12.3 minutes while the maximum time was 110 minutes. The more extreme time lengths were removed from the sample, as these reasonably could not have been completed in one sitting. When these items were removed, the range condensed to a minimum time of 12.3 minutes and a maximum time of 55.5 minutes. The average was 31.2 minutes (σ = 13.8 minutes).

Feedback regarding the questionnaire was also solicited. All respondents indicated they understood all questions and could appropriately answer. Cronbach's alpha reliabilities for each were then determined, with Cronbach's alphas being sufficiently above the required threshold of 0.6 to include these measures for the constructs studied. Further, three experts within supply chain validated that the questions appropriately assessed supply chain operations. This indicated that in addition to measurable Cronbach's alpha reliability scores, the scales also had face validity. Based on this preliminary assessment, I proceeded with survey distribution.

Sample

To answer the questionnaire, respondents needed to have a firm understanding of both their organizational strategy as well as the supply chain design for their given product category. In addition, respondents needed to understand both relative financial performance as compared to other competitors within the same industry as well as targeted supply chain measures related to reliability, responsiveness, agility, cost, and asset management efficiency. To ensure respondents had the appropriate perspective, they needed to hold a strategic role within the

organization. Typically, this would require the respondent to be at a director-level or above, although exceptions were made for smaller organizations where managers held strategic roles.

Participants were identified via outreach on LinkedIn using listed titles and prior work experience, with recipients encouraged to forward the request for participation to others meeting the research study selection criteria. I posted requests on a bi-weekly basis between August 23, 2018, and November 10, 2018. Multiple LinkedIn connections "liked" or "shared" my request for participation, further boosting visibility through the social media network. In addition to notifying my own network on LinkedIn, I also routinely posted requests for participation to the following user groups: APICS, APICS SCOR User Group, APICS CSCP, Supply Chain Optimization, Operational Excellence, and Logistics and Supply Chain Professionals. I supplemented with email requests sent directly to 875 contacts meeting the sample criteria. Many of these contacts overlapped with potential respondents reached through LinkedIn.

To extend beyond this group, I also attended numerous conferences. While socializing with participants, I personally requested those meeting the inclusion criteria to complete the online survey. In addition to the verbal request, I handed each participant a business card as a physical reminder to complete the survey. The business card had my contact information on the front and the request for participation along with a link to the survey on the back. Conferences attended include the National Association of Chain Drug Stores (NACDS) Total Store Expo (TSE) held in Denver, CO, in August 2018, the national APICS conference held in Chicago, IL, in September 2018, AmerisourceBergen Corporation's Thought Leaders conference held in Philadelphia, PA, in November 2018, and AmerisourceBergen's ThinkLive conference also held in Philadelphia, PA, in November 2018. Each of these conferences had attendees at senior levels

of their organizations, making these optimal target pools for the study. By the conclusion of the conference, I had distributed 92 business cards soliciting participation.

With each posting on LinkedIn, email solicitation, or personal request at a conference, participants were assured of confidentiality and directed to the survey via a link to the Qualtrics survey. Similar to the pilot, the survey required an average of 28.6 minutes to complete (σ = 13.2 min). Given the length of the survey, I offered each participant that completed a survey a chance to win one of 20 Amazon electronic gift cards valued at $50 each. To be considered for the drawing, respondents had to email me directly indicating they completed the survey since I did not collect any identifying information within the survey itself. Ideally, the sample size should have been large enough to include 20 respondents for each independent variable and control variable assessed. Given the four independent variables related to the Miles et al. (1978) strategy type and two control variables, I targeted a sample size of at least 120 respondents. Although I had 159 individual responses, only 95 completed a sufficient portion of the survey to allow for analysis. This provided a more modest 14 respondents per variable. Power analysis indicated this reduced sample size only allows for detection of effect sizes of .25 or greater, assuming Type I error rate of 5% and Type II error rate of 20% (see Appendix G, Figure 2).

Analysis

A variety of analytical methods were used. These methods include an initial review of the descriptive statistics for respondents. The next step was an exploratory factor analysis to determine the multidimensional nature of the scales used. Using SPSS, each variable was initially standardized. These standardized variables were then analyzed using the “Factor” option of the “Dimension Reduction” submenu. The initial solution option for factor analysis was chosen, with the principal component analysis selected as the extraction method. Data was

analyzed using a correlation matrix with the unrotated factor solution displayed. Extractions were based on eigenvalues greater than 1, and the maximum allowed iterations for convergence was set at 25. Output was then rotated using the Varimax method, with variables saved using the regression method. This concluded the transformation of data in SPSS. Items were then assigned to factors using the following rules. First, each item must have loaded at least .4 on a respective factor, slightly higher than the .32 level suggested by Tabachnick and Fidell (2001). Second, there should have been a minimum difference of .2 for the loading of the next highest factor. Third, the first component meeting these criteria received the assignment, as it explained the bulk of the variance.

In conjunction with the factor analysis, reliability of each variable was assessed using Cronbach's alpha coefficient (Cronbach, 1951). The Cronbach's alpha coefficient provides evidence of internal consistency for items included in a scale, with target thresholds of .60 for scales with only three or four items or .70 for larger scales (Nunnally, 1978). Finally, regression was used to assess the system of relationships between the various variables. This included standard linear regression to test relationships between hypothesized causal agents and effects. Multiple regression was used to test for the presence of mediation effects between variables.

Results

Descriptive Statistics

The initial survey received 159 responses. Responses from those not meeting the study inclusion criteria were removed. In addition, those cases that completed less than 95% of all questions were also removed. This left a sample size of 95 responses to analyze. Of these, 67 (71%) indicated they were male while 28 (29%) indicated they were female. The average age

was 47.3 years old (σ = 8.5 years), with an average work history of 26.3 years (σ = 11.0 years). Work experience within supply chain management averaged 14.4 years (σ = 11.1 years), while experience working at the current place of employment was 8.2 years (σ = 7.7 years). Most respondents held strategic-level positions such as director, senior director, or vice president (n = 60 or 63%). Due to the unknown number of potential respondents reached by requests for participation, calculation of a non-response bias was not possible. See Appendix H, Figure 3 for respondents' position level within their firms.

In addition to level of position, respondents were asked to share their knowledge level of the various strategies followed by their organization. These strategies included the overall corporate strategy, the business unit strategy, product category strategy, and the supply chain strategy. In all cases, the majority of respondents indicated that they either somewhat agreed or strongly agreed (on a 5-point, Likert-like scale) that they were knowledgeable about the specified strategy. Of the 95 cases analyzed, 70 (79%) somewhat or strongly agreed they were knowledgeable about the corporate strategy, 72 (82%) somewhat or strongly agreed they were knowledgeable about the business unit strategy, 61 (69%) somewhat or strongly agreed they were knowledgeable about the product category strategy, and 55 (63%) somewhat or strongly agreed they were knowledgeable about the supply chain strategy. See Appendix H, Figure 4 for respondents' indicated level of knowledge of their organizations' various strategies.

Respondents represent multiple company profiles. Business units have an average of 33.6 years (σ = 27.4 years) of operating experience. Based on industry categories provided by the United States Department of Labor Bureau of Labor and Statistics, the majority of responses are from both goods-producing and service-providing industries. Of the 95 responses analyzed, 46 (48%) were from Manufacturing and another 25 (26%) were from Trade, Transportation and

Utilities. This category includes Wholesale, Retail, and Warehousing. Another nine (9%) of the responses were from Professional and Business Services. See Appendix H, Figure 5 for more details regarding the industry profile of the respondents.

In addition, a variety of company sizes were included. In terms of number of employees, 36 (38%) had less than 100 employees, 18 (19%) had between 100 and 500 employees, 10 (11%) had between 501 and 1,000 employees, 15 (16%) had between 1,001 and 5,000 employees, and 15 (16%) had 5,001 or more employees (see Appendix H, Figure 6). In terms of revenue, 6 (6%) made less than $1 million per year, 7 (7%) made between $1,000,001 and $10 million per year, 16 (17%) made between $10,000,001 and $50 million per year, 34 (36%) made between $50,000,001 and $1 billion per year, and 31 (33%) made more than $1 billion per year (see Appendix H, Figure 7).

In terms of geographical business focus, there was diverse representation. Of the 95 responses analyzed, 6 (6%) did not respond. Another 35 (37%) indicated the scope of their business unit covered an international market, while 49 (52%) focused at the national level. Others had an even narrower geographical concentration, with 2 (2%) covering a regional area and another 3 (3%) focusing on a highly local market (see Appendix H, Figure 8). While 7 (7%) individuals did not respond, 17 (18%) indicated their corporate headquarters were outside the United States or Canada while 71 (75%) have their corporate headquarters in the US or Canada (see Appendix H, Figure 9). For their specific business unit, again 7 (7%) did not respond. Another 13 (14%) indicated their business unit headquarters were outside the United States or Canada, while 75 (79%) have their business unit headquarters in the US or Canada (see Appendix H, Figure 10).

Factor Analysis & Cronbach's Alpha Reliabilities

Independent Variables

Strategy Archetype – Defender

The initial Cronbach's alpha score for the eleven-item scale was a mere .522. Given the size of the scale, a threshold of at least .7 was required. As such, the entire scale could not be considered as a collective construct since internal consistency was not established. Further, factor analysis for the *Defender* strategy archetype revealed that the eleven items loaded onto four separate factors. Factor 1 consisted of Items 1, 5, 8, and 9, with a minimum weight of .627 and a maximum weight of .752. These items conceptually address the cost-focused nature with which some businesses approach operations. As such, these items could be further considered as a potential subscale representing a single construct. The Cronbach's alpha for this reduced scale was .682, meaning this met the minimum requirements to establish internal consistency. This subscale of four items was labeled *Defender – Cost Focus*. Factor 2 consisted of only Items 3, 6, and 7. These three items have weights ranging from .490 to .831, with the largest secondary factor only having a weight of .242. Further, the Cronbach's alpha for this subscale was .646. Since there are only three items, the minimum required threshold of .6 for internal consistency was met. Given that these three questions pertain to a firm's focus on a narrow product or service offering, this subscale was named *Defender – Narrow Focus*.

Other items were removed from analysis for a variety of reasons. Only one or two items each loaded onto Factors 3 and 4. Where two items loaded, the underlying questions did not share the same conceptual construct. As such, they could not be combined into a reduced subscale. This eliminated Items 2, 4, and 11 from further analysis. Further, Item 10 did not meet the minimum threshold of definitively loading against a single factor as the two highest factors

had roughly equivalent scores (.420 and .434). See Appendix I, Table 4 for the full factor loadings for the *Defender* strategy archetype.

Strategy Archetype – Prospector

The initial Cronbach's alpha score for the eleven-item scale was a substantial .854. Factor analysis for the *Prospector* strategy archetype revealed that the eleven items loaded onto three separate factors. Factors 1 and 2 had four items each, whereas Factor 3 only consisted of Item 2. In addition, Items 1 and 3 did not definitively load onto any single factor. As such, these items were only included in the larger *Prospector* scale and not considered as part of any subscales.

Factor 1 consisted of Items 4, 7, 8, and 9. These questions concerned the business focus on developing new markets. Weights for each factor ranged from a minimum loading of .609 to a maximum loading of .800. Subsequent Cronbach's alpha review indicated that dropping Item 9 and reducing the scale to only three items would raise the Cronbach's alpha score to .774. As such, Items 4, 7, and 8 were used to make a subscale named *Prospector – New Markets*.

Factor 2 consisted of Items 5, 6, 10, and 11. These questions addressed the internal focus on developing resources required to develop new items and markets. Loading factors ranged from a minimum weight of .590 to a maximum weight of .812. The highest weight on any other factor was .333. Given the spread between the factors, these four items were used to create a subscale named *Prospector – Resources*. The Cronbach's alpha for this subscale was .714, meeting the minimum requirements to establish internal consistency. See Appendix I, Table 5 for the full factor analysis results of the *Prospector* strategy archetype.

Strategy Archetype – Analyzer

The initial Cronbach's alpha score for the eleven-item scale was only .627. Given the size of the scale, a threshold of at least .7 was required. Factor analysis for the *Analyzer* strategy archetype revealed that the eleven items loaded onto four separate factors. Factor 1 consisted of Items 2, 5, 6, 7, 8, and 9, with a minimum weight of .430 and a maximum weight of .806. The largest secondary loading was only .271, meaning these items could be assigned to a subscale. The Cronbach's alpha for this reduced scale was .775, above the required threshold for internal consistency. As there was only one scale, this variable retained the label *Analyzer*.

Other items were removed from analysis for a variety of reasons. First, only one or two items each loaded onto Factors 2, 3, and 4. Where two items loaded, the underlying questions did not share the same conceptual construct. As such, they could not be combined into a reduced subscale. This eliminated Items 1, 3, 4, and 10 from further analysis. Further, Item 11 did not definitively load against a single factor as the highest weighting was only .220. See Appendix I, Table 6 for the full factor analysis results for the *Analyzer* strategy archetype.

Strategy Archetype – Reactor

The initial Cronbach's alpha score for the eleven-item scale was .691, just below the minimum threshold of .7 required for a scale of this size. Factor analysis for the *Reactor* strategy archetype revealed that the eleven items loaded onto three separate factors. Factor 1 consisted of Items 5 through 11, with a minimum weight of .579 and a maximum weight of .787. The largest secondary loading was only .364, meaning there was sufficient spread between the primary and secondary factor loadings. The Cronbach's alpha for this reduced scale was .797, well above the minimum requirements to establish internal consistency for the *Reactor* scale.

Other items were removed from analysis. While Items 1, 3, and 4 loaded onto Factor 2, the nature of the questions did not conceptually align. As such, they could not be combined into a reduced subscale. Further, only Item 2 loaded against Factor 3. This was insufficient to form a subscale as well. Due to these reductions, Items 1 through 4 were eliminated. See Appendix I, Table 7 for the full factor analysis results for the *Reactor* strategy archetype.

Mediating Variables

Supply Chain Design – Leagile, Agile, & Lean

Lo and Power (2010) created a 17-item scale to classify the design of a supply chain as lean, agile, or leagile. While all 17 items collectively measure *Leagile*, the scale consists of a ten-item subscale for *Agile* and a seven-item subscale for *Lean*. Using these established scales as a starting point, I reviewed the internal consistency of the measures within my data set. The initial Cronbach's alpha score for the seventeen-item *Leagile* scale was .785, well above the required threshold of .7. Consistent with Lo and Power (2010), the initial factor analysis for *Leagile* indicated the presence of multiple factors (see Appendix I, Table 8). Following the methodology of Lo and Power (2010), I used the scales identified in their analysis for the three supply chain designs. As such, *Leagile* was retained as a singular variable for supply chain design.

Likewise, the *Agile* subscale showed significant internal consistency with a Cronbach's alpha of .800. This provided support for retaining *Agile* as a consolidated variable. Additionally, review of the factor analysis for *Agile* indicated that five items (Items 2, 14, 15, 16, and 17) loaded onto a single factor (see Appendix I, Table 9). The content of these questions focused on the speed and flexibility of supply chains, indicating a conceptual clustering of the items. The Cronbach's alpha for these five items was .833, providing evidence of internal consistency. As such, this subscale was identified as a variable and labeled *Agile – Speed & Flexibility*.

Unfortunately, though, the seven items on the *Lean* subscale had a Cronbach's alpha of only .581. This did not meet the threshold required to retain all items. Using a combination of factor analysis (see Appendix I, Table 10) and item deletion, the subscale was reduced to only three items (Items 1, 9, and 12). This refined subscale had a Cronbach's alpha of .664, a value above the threshold requirement of .6 for a scale using only three or four items.

Dependent Variables

Firm Performance – Market Share Gains

The factor analysis for *Market Share Gains* revealed that all four items from the scale loaded onto a single factor (se Appendix I, Table 11). Each had a relative weight of at least .8, well above the minimum requirement of .4. When testing for internal consistency, the Cronbach's alpha score for the four-item scale was .862. This is well above the minimum requirement of only .6 for a scale of this size. As such, all items were used for the composite scale of *Market Share Gains*.

Firm Performance – Profitability

The factor analysis for *Profitability* showed that all four items from the scale loaded onto a single factor (see Appendix I, Table 12). Each had a relative weight of at least .9, well above the minimum requirement of .4. In addition, the Cronbach's alpha for these four items was a substantial .941. As such, all items were used for the composite scale of *Profitability*.

Firm Performance – Performance

In addition to reviewing *Market Share Gains* and *Profitability* independently, all eight items were collectively reviewed as a measure of total financial performance. When assessed together, all eight items again loaded onto a single factor (see Appendix I, Table 13). The minimum weight was .746, which again is well above the minimum requirement of .4. Further, the internal consistency for the entire eight-item scale was extremely high with a Cronbach's

alpha of .931. As such, an additional variable was created using all eight items as part of a composite scale for *Performance*.

Supply Chain Outcomes – Reliability

The factor analysis for *Reliability* revealed that all four items from the scale loaded onto a single factor (see Appendix I, Table 14). Each had a relative weight of at least .75, well above the minimum requirement of .4. In addition, the Cronbach's alpha for these four items was a substantial .771. As such, all items were used for the composite scale of *Reliability*.

Supply Chain Outcomes – Responsiveness

The factor analysis for *Responsiveness* indicated that all four items from the scale loaded onto a single factor (see Appendix I, Table 15). In addition, the Cronbach's alpha for these four items was .769. As such, all items were used for the composite scale of *Responsiveness*.

Supply Chain Outcomes – Agility

The factor analysis for *Agility* showed that all eight items from the scale loaded onto two factors. Even so, the overall grouping of item items had a Cronbach's alpha of .846. This provides support for the consideration of *Agility* as a standalone variable.

However, the factor analysis does reveal the presence of two strong, distinct elements. Items 1 through 5 loaded onto Factor 1, with a minimum weight of .496 and a maximum weight of .855 (see Appendix I, Table 16). All secondary factors are at least .4 lower than the primary loading, and the Cronbach's alpha for the cluster is .815. As the five questions pertained to a supply chain's ability to increase output within a limited period, this variable was named *Agility – Upside*. Additionally, Items 6, 7, and 8 clustered onto Factor 2, with loading weights ranging from .748 to .907. Again, all secondary loadings were at least .4 lower than the primary loading, and the Cronbach's alpha met minimum threshold requirements to establish internal consistency

with a value of .848. Since these three questions assessed the supply chain's ability to decrease output within a limited period, this variable was labeled as *Agility – Downside.*

Supply Chain Outcomes – Costs

The factor analysis for *Costs* showed that all eight items from the scale loaded onto two factors (see Appendix I, Table 17). Even so, the overall grouping of items had a Cronbach's alpha of .860. This provides support for the consideration of *Costs* as a standalone variable. Factor analysis also revealed the presence of two elements, and a conceptual review split the questions into two groups. Items 1 through 5 related to what the Supply Chain Operations Reference model refers to as *Total Supply Chain Management Costs*, whereas the group consisting of Items 6, 7, and 8 concerned *Cost of Goods Sold (COGS)*. *Total Supply Chain Management Costs* had a Cronbach's alpha of .776, while *Cost of Goods Sold* had a Cronbach's alpha of .794. As such, the aggregate variable *Costs* was considered for analysis as were the subscales of *Total Supply Chain Management Costs* and *Cost of Goods Sold*.

Supply Chain Outcomes – Asset Management Efficiency

The factor analysis for *Asset Management Efficiency* showed that all five items from the scale loaded onto two factors (see Appendix I, Table 18). Items 3 and 4 loaded onto Factor 1, while Item 2 loaded onto Factor 2. Items 1 and 5 actually have negative loading weights. Consequently, the initial Cronbach's alpha for this five-item scale was -.557. This indicates a conceptual misunderstanding of questions, as respondents provided values in the opposite direction of what was expected. Using the factor analysis and deleting items from the larger list of items, the scale reduced to Items 3 and 4. Even so, the Cronbach's alpha only reached .563. As such, any analysis and resultant conclusions should be taken with reservation.

Control Variables

Environment

The factor analysis for the control variable *Environment* assessed the loading of the 16 individual items used as part of the original scale. When reviewed collectively, all 16 items had a Cronbach's alpha of .710. This suggests sufficient internal consistency that these items can be considered as a single variable, termed simply *Environment.* See Appendix I, Table 19 for the complete factor analysis of the *Environment* variable.

Additionally, the initial assessment revealed that the 16 items loaded across five individual factors. The first four items loaded onto Factor 2. These items conceptually focused on the uncertainty of the business environment in which the firm operates. With a minimum weight of .737 and a maximum weight of .843 loading onto this factor, these items also did not load more than .293 onto any other factor. Given the large spread between the primary and secondary factors, the items were determined to all represent Factor 2. Additionally, the Cronbach's alpha for this subscale was .809, providing further support of consideration of this subscale as representing a single construct. This variable was labeled *Uncertainty*.

The next four items (Items 5 through 8) loaded onto Factor 1. The conceptual nature of the questions for these items related to the role of technology in shaping the environment in which the respondents' businesses operate. With a minimum weight of .723 and a maximum weight of .842 loading onto Factor 1, these items did not load more than .219 onto any other factor. Again, given the large range between the primary and secondary loadings, the items were determined to all represent Factor 1. As with the initial item set, this subscale had high internal consistency with a Cronbach's alpha of .809. This variable was labeled *Technology*.

The next two factors only had three items each. Factor 3 consisted of Items 9 through 11. The questions for these items addressed the competitive nature of the business environment. With a minimum weight of .703 and a maximum weight of .848 loading onto Factor 3, these items did not load more than .272 onto any other factor. Given the large spread between the primary and secondary loadings, the three items were determined to all represent Factor 3. The three-item scale had a Cronbach's alpha of .736, indicating sufficient internal consistency to support consideration of these three items as representing a single construct. This variable was labeled *Competition*.

Items 13, 14, and 16 loaded onto Factor 4. Conceptually, these questions assessed the degree of growth within the business environment. Loadings onto Factor 4 ranged from a minimum weight of .876. A review of internal consistency showed a Cronbach's alpha of .660, meeting the minimum requirements for a scale containing only three items. This variable was named *Growth*. Finally, Factor 5 only had a single item (Item 15). As such, this did not meet the minimum requirement to have at least two items to constitute a scale. Therefore, Item 15 was excluded from further analysis.

For a complete listing of means, standard deviations, and alpha reliabilities of all variables used in the study, please reference Appendix J, Table 20.

Regression Analysis

Linear regression was used to test the relationships outlined in Hypotheses 1 through 11, with simple linear regression used for Hypotheses 1 through 4, multiple linear regression used for Hypotheses 5 through 8, and simple linear regression again used for Hypotheses 9 through 11. For each set of examined relationships, I ran six separate tests. The first only considered the independent and dependent variables and did not include any control variables. The second test

considered the entire block of items for the control variable *Environment*. The third test controlled for only the *Uncertainty* and *Technology* dimensions of the environment, while the fourth test controlled for the *Competition* and *Growth* elements of the environment. The fifth test controlled for only *Operating Experience* of the business unit, and the sixth and final test controlled for the *Scope* of the business unit.

Relationships between Corporate Strategy and Supply Chain Design

The first four hypotheses concern the degree to which firms that follow a specific Miles et al. (1978) strategy archetype will adopt a certain supply chain design.

Hypothesis 1: *Defender* Strategy

The first hypothesis concerns the *Defender* strategy type. Specifically, the more a firm follows a *Defender* strategy, the more likely it will also adopt a *Lean* supply chain design (H_{1A}). Conversely, the more a firm follows a *Defender* strategy, the less likely it will adopt either an *Agile* (H_{1B}) or *Leagile* (H_{1C}) supply chain design. Linear regression was used to test all variables related to this hypothesis. Given that the *Defender* variable was determined to actually be two variables during factor analysis (*Defender – Cost Focus* and *Defender – Narrow Focus*) and that the *Agile* supply chain design was determined to also have a subscale focused on speed and flexibility (*Agile – Speed & Flexibility*), this stage of testing required 48 separate tests (2 strategy types * 4 supply chain designs * 6 control variable conditions). None of the hypothesized relationships described in H_{1A}, H_{1B}, nor H_{1C} were supported. See Appendix K, Table 21 for full regression results related to Hypothesis H_{1A}, Appendix K, Table 22 for full regression results related to Hypothesis H_{1B}, and Appendix K, Table 23 for full regression results related to Hypothesis H_{1C}.

Hypothesis 2: *Prospector* Strategy

The second hypothesis concerns the *Prospector* strategy type. Specifically, the more a firm follows a *Prospector* strategy, the more likely the firm will adopt an *Agile* supply chain design (H_{2B}). Conversely, the more a firm follows a *Prospector* strategy, the less likely the firm will adopt either a *Lean* (H_{2A}) or *Leagile* (H_{2C}) supply chain design. Linear regression was used to test all variables related to this hypothesis. Given that the *Prospector* construct could be assessed using the aggregated variable (*Prospector*) as well as two subscales (*Prospector – New Markets* and *Prospector – Resources*) and that the *Agile* type of supply chain was determined to also have a subscale focused on speed and flexibility (*Agile – Speed & Flexibility*), this stage of testing required 72 separate tests (3 strategy types * 4 supply chain designs * 6 control variable conditions).

The hypothesized relationship between the *Prospector* strategy types and the *Lean* supply chain design (H_{2A}) found limited support. When controlling for *Environment* of the business unit, a significant, negative correlation was found between both the *Prospector* and *Prospector – Resources* strategy types and a *Lean* supply chain design. A simple linear regression was calculated to predict *Lean* based on *Prospector*. A significant regression equation was found ($F(2,85) = 3.121$, $p < .10$), with an R^2 of .068 predicting *Lean* equal to 3.901 - .234 (*Prospector*). In addition, a simple linear regression was calculated to predict *Lean* based on *Prospector – Resources*. A significant regression equation was found ($F(2,88) = 3.556$, $p < .10$), with an R^2 of .075 and predicting that *Lean* is equal to 3.817 - .223 (*Prospector – Resources*). When controlling for the *Scope* of the business unit, a simple linear regression was calculated to predict *Lean* based on both *Prospector* and *Prospector – New Markets*. A simple linear regression was calculated to predict *Lean* based on *Prospector*. A significant regression equation was found ($F(2,80) = 2.794$, $p < .10$), with an R^2 of .065 and predicting that *Lean* is equal to 4.218 - .234

(*Prospector*). In addition, a simple linear regression was calculated to predict *Lean* based on *Prospector – New Markets*. A significant regression equation was found ($F(2,84) = 2.875$, $p < .10$), with an R^2 of .064. Respondents predicted *Lean* to be equal to 3.945 - .195 (*Prospector – New Markets*). When controlling for *Uncertainty* and *Technology* of the business unit, a simple linear regression was calculated to predict *Lean* based on *Prospector – Resources*. A significant regression equation was found ($F(3,87) = 1.656$, $p < .10$) with an R^2 of .054, predicting *Lean* to be equal to 4.422 - .191 (*Prospector – Resources*). See Appendix K, Table 24 for full regression results related to Hypothesis H_{2A}.

The hypothesized relationship between the *Prospector* strategy types and the *Agile* supply chain design (H_{2B}) found more robust support. Indeed, *Prospector*, *Prospector – New Markets*, and *Prospector – Resources* all have significant, positive correlations with both *Agile* and *Agile – Speed & Flexibility* supply chain designs. This held true in all control variable scenarios tested. For example, a simple linear regression was calculated to predict *Agile* based on *Prospector*. A significant regression equation was found ($F(1,85) = 14.052$, $p < .001$, R^2 of .142), predicting that *Agile* is equal to 2.629 + .316 (*Prospector*). See Appendix K, Table 25 for full regression results for Hypothesis H_{2B}.

The hypothesized relationship between the *Prospector* strategy types and the *Leagile* supply chain design (H_{2C}) found no support. Regardless of control conditions tested, the strategy types of *Prospector*, *Prospector – New Markets*, and *Prospector – Resources* do not have the predicted negative relationships with a *Leagile* supply chain design. This held true in all control variable scenarios tested. Indeed, in the majority of conditions, the opposite held true in that significant, positive relationships exist. This suggests that the more a firm follows a *Prospector*

strategy, the more likely the firm will also adopt a *Leagile* supply chain design. See Appendix K, Table 26 for full regression results for Hypothesis H_{2C}.

Hypothesis 3: *Analyzer* Strategy

The third hypothesis predicts that the more a firm follows an *Analyzer* strategy, the more likely the firm will adopt a *Leagile* supply chain design (H_{3C}). Conversely, the more a firm follows an *Analyzer* strategy, the less likely the firm will adopt either a *Lean* (H_{3A}) or *Agile* (H_{3B}) supply chain design. Linear regression was used to test all variables related to this hypothesis. While the *Analyzer* construct could be assessed using the single aggregated variable, the *Agile* supply chain design used both the aggregated variable (*Agile*) and a subscale focused on speed and flexibility (*Agile – Speed & Flexibility*). This analysis required 24 separate tests (1 strategy type * 4 supply chain designs * 6 control variable conditions).

Analysis for the three hypotheses yielded mixed results. The hypothesized relationship between the *Analyzer* strategy type and the *Lean* supply chain design (H_{3A}) found no support. Regardless of the control conditions applied, no significant relationships between *Analyzer* strategy type and a *Lean* supply chain design were identified (see Appendix K, Table 27). In addition, the hypothesized negative correlation between the *Analyzer* strategy type and the *Agile* supply chain designs (H_{3B}) found no support. Instead, for all control variable conditions, significant, *positive* relationships between the *Analyzer* strategy and both the *Agile* and *Agile – Speed & Flexibility* supply chain designs were identified (see Appendix K, Table 28). Finally, the hypothesized relationship between the *Analyzer* strategy type and the *Leagile* supply chain design (H_{3C}) found full support. As predicted, the more a firm follows an *Analyzer* strategy, the more likely the firm will adopt a *Leagile* supply chain. This held true in all control variable scenarios tested. As an example, a simple linear regression was calculated to predict *Leagile*

based on *Analyzer*. A significant regression equation was found ($F(1,88) = 13.320$, $p < .001$) with an R^2 of .131. Respondents predicted *Leagile* to be equal to 3.186 + .241 (*Analyzer*). See Appendix K, Table 29 for full regression results for Hypothesis H_{3C}.

Hypothesis 4: *Reactor* Strategy

The fourth hypothesis concerns the *Reactor* strategy type. Specifically, there should be no significant relationship between a *Reactor* strategy and either a *Lean* (H_{4A}), *Agile* (H_{4B}), or *Leagile* (H_{4C}) supply chain design. Linear regression was used to test all variables related to this hypothesis. While the *Reactor* construct could be assessed using the single aggregated variable, the *Agile* supply chain design used both the aggregated variable (*Agile*) and a subscale focused on speed and flexibility (*Agile – Speed & Flexibility*). As such, this analysis required 24 separate tests (1 strategy type * 4 supply chain designs * 6 control variable conditions).

As hypothesized, the lack of a significant relationship between the *Reactor* strategy type and the *Lean* supply chain design (H_{4A}) found full support. All control conditions yielded similar, insignificant results (see Appendix K, Table 30). In addition, the hypothesized lack of a significant relationship between the *Reactor* strategy type and the *Agile* supply chain design (H_{4B}) found no support. Instead, for all control variable conditions, significant, *positive* relationships between the *Reactor* strategy and both the *Agile* and *Agile – Speed & Flexibility* supply chain designs were identified (see Appendix K, Table 31). Finally, the hypothesized lack of a significant relationship between the *Reactor* strategy type and the *Leagile* supply chain design (H_{4C}) found only partial support. Instead, almost all control conditions found significant, *positive* relationships between the *Reactor* strategy and *Leagile* supply chain designs. The only control variable condition which failed to detect a significant relationship was the one that controlled for the *Environment* (see Appendix K, Table 32).

Results for Hypotheses 1 through 4 are summarized in Table 33.

Table 33. Summary of Results for Hypotheses 1 through 4

Hypothesis		**Hypothesis supported**
H_{1A}	The more a firm follows a *Defender* strategy, the more likely the firm will adopt a *Lean* supply chain.	No
H_{1B}	The more a firm follows a *Defender* strategy, the less likely the firm will adopt an *Agile* supply chain.	No
H_{1C}	The more a firm follows a *Defender* strategy, the less likely the firm will adopt a *Leagile* supply chain.	No
H_{2A}	The more a firm follows a *Prospector* strategy, the less likely the firm will adopt a *Lean* supply chain.	Partial
H_{2B}	The more a firm follows a *Prospector* strategy, the more likely the firm will adopt an *Agile* supply chain.	Full
H_{2C}	The more a firm follows a *Prospector* strategy, the less likely the firm will adopt a *Leagile* supply chain.	No
H_{3A}	The more a firm follows an *Analyzer* strategy, the less likely the firm will adopt a *Lean* supply chain.	No
H_{3B}	The more a firm follows an *Analyzer* strategy, the less likely the firm will adopt an *Agile* supply chain.	No
H_{3C}	The more a firm follows an *Analyzer* strategy, the more likely the firm will adopt a *Leagile* supply chain.	Full
H_{4A}	There will be no significant relationship between a firm-level *Reactor* strategy and adoption of a *Lean* supply chain.	Full
H_{4B}	There will be no significant relationship between a firm-level *Reactor* strategy and adoption of an *Agile* supply chain.	No
H_{4C}	There will be no significant relationship between a firm-level *Reactor* strategy and adoption of a *Leagile* supply chain.	Partial

Influence of Supply Chain Design on Corporate Strategy and Performance

The next four hypotheses predicted how adoption of a specific supply chain design will mediate the impact of a specific Miles et al. (1978) strategy archetype on firm performance. These hypotheses were tested using multiple regression. In the first step, the relationship between the independent variable and the mediator was tested. In the second step, the relationship between the mediator and the dependent variable was measured. Then, in the third step, the mediating relationship was tested with the independent variable, the mediator, and the dependent variable. Finally, if the first three tests all showed significant results in the predicted

direction, a Sobel test was performed to test for indirect effects. Passing this final test provided evidence of mediation.

As with the first four hypotheses, all relationships were tested under six sets of control variables. The first test only considered the independent and dependent variables and did not include any control variables. The second test considered the entire block of items for the control variable *Environment*. The third test controlled for only the *Uncertainty* and *Technology* dimensions of the environment, while the fourth test controlled for the *Competition* and *Growth* elements of the environment. The fifth test controlled for only *Operating Experience* of the business unit, and the sixth and final test controlled for the *Scope* of the business unit.

Hypothesis 5: *Defender* Strategy x *Lean* Supply Chain Design

The fifth hypothesis predicted that the more a firm adopts a *Lean* supply chain design, the more significant the connection between a *Defender* strategy and performance. Factor analysis determined that the *Defender* variable could not be measured in aggregate and instead was two variables (*Defender – Cost Focus* and *Defender – Narrow Focus*), while perceived financial performance can be measured using *Profitability* (H_{5A}), *Market Share Gains* (H_{5B}), or the aggregate variable *Performance*. As such, this stage of testing required 36 separate tests (2 strategy types * 3 performance outcomes * 6 control variable conditions). The hypothesized mediation of a *Lean* supply chain design on the relationship between a *Defender* strategy and performance was not found. This held true for all 36 combinations of two *Defender* variables, a single *Lean* supply chain design, three performance measures, and six control conditions. As such, both Hypothesis H_{5A} and Hypothesis H_{5B} were rejected. See Appendix K, Table 34 for full regression results for Hypotheses H_{5A} and H_{5B}.

Hypothesis 6: *Prospector* Strategy x *Agile* Supply Chain Design

Hypothesis 6 predicted that the more a firm adopts an *Agile* supply chain design, the more significant the connection between a *Prospector* strategy and *Performance*. As indicated previously, factor analysis determined that the *Prospector* construct could be assessed using the aggregated variable (*Prospector*) as well as two subscales (*Prospector – New Markets* and *Prospector – Resources*). In addition, the *Agile* supply chain design was determined to have both an aggregate variable (*Agile*) as well as a subscale focused on speed and flexibility (*Agile – Speed & Flexibility*). Given that *Profitability* and *Market Share Gains* could collectively be measured using an aggregated variable (*Performance*), this stage of testing required 108 separate tests (3 strategy types * 2 supply chain designs * 3 performance measures * 6 control variable conditions). The hypothesized mediation of an *Agile* supply chain design on the relationship between a *Prospector* strategy and performance was not found. This held true for all 108 combinations of three *Prospector* strategy variables, two *Agile* supply chain designs, three performance measures, and six control conditions. As such, both Hypothesis H_{6A} and Hypothesis H_{6B} were rejected. See Appendix K, Table 35 for regression results for Hypotheses H_{6A} and H_{6B}.

Hypothesis 7: *Analyzer* Strategy x *Leagile* Supply Chain Design

Hypothesis 7 predicted that the more a firm adopts a *Leagile* supply chain design, the more significant the connection between an *Analyzer* strategy and performance. As indicated previously, factor analysis determined that *Profitability* and *Market Share Gains* could collectively be measured using an aggregated variable (*Performance*). With all other constructs containing one variable each, this stage of testing required 18 separate tests (1 strategy type * 1 supply chain design * 3 performance measures * 6 control variable conditions). Both Hypotheses H_{7A} and H_{7B} were rejected as the hypothesized mediation of a *Leagile* supply chain design on the relationship between an *Analyzer* strategy and performance was not found. This held true for all

18 combinations of one *Analyzer* strategy variable, one *Leagile* supply chain design, three performance measures, and six control conditions. See Appendix K, Table 36 for full regression results for Hypotheses H_{7A} and H_{7B}.

Hypothesis 8: *Reactor* Strategy x *Leagile* Supply Chain Design

Hypothesis 8 predicted that the more a firm adopts a *Leagile* supply chain design, the more significant the connection between a *Reactor* strategy and performance. As factor analysis determined that *Profitability* and *Market Share Gains* could collectively be measured using an aggregated variable (*Performance*), this stage required 18 tests (1 strategy type * 1 supply chain design * 3 performance measures * 6 control variable conditions). However, the hypothesized mediation by a *Leagile* supply chain design on the relationship between a *Reactor* strategy and performance was not found. This held true for all 18 combinations. As such, both Hypothesis H_{8A} and Hypothesis H_{8B} were rejected. See Appendix K, Table 37 for full regression results Hypotheses H_{8A} and H_{8B}.

After reviewing all hypotheses predicting supply chain mediation of the relationship between strategy type and perceived financial performance, no support was found. A summary of results for Hypotheses 5 through 8 can be found in Table 38.

Table 38. Summary of Results for Hypotheses 5 through 8

Hypothesis		**Hypothesis supported**
H_{5A}	The more a firm adopts a *Lean* supply chain design, the more significant the connection between a *Defender* strategy and firm *Profitability*.	No
H_{5B}	The more a firm adopts a *Lean* supply chain design, the more significant the connection between a *Defender* strategy and *Market Share Gains*.	No
H_{6A}	The more a firm adopts an *Agile* supply chain design, the more significant the connection between a *Prospector* strategy and firm *Profitability*.	No
H_{6B}	The more a firm adopts an *Agile* supply chain design, the more significant the connection between a *Prospector* strategy and *Market Share Gains*.	No
H_{7A}	The more a firm adopts a *Leagile* supply chain design, the more significant the connection between an *Analyzer* strategy and firm *Profitability*.	No
H_{7B}	The more a firm adopts a *Leagile* supply chain design, the more significant the connection between an *Analyzer* strategy and *Market Share Gains*.	No
H_{8A}	The more a firm adopts a *Leagile* supply chain design, the more significant the connection between a *Reactor* strategy and firm *Profitability*.	No
H_{8B}	The more a firm adopts a *Leagile* supply chain design, the more significant the connection between a *Reactor* strategy and *Market Share Gains*.	No

Relationship between Supply Chain Design and Supply Chain Outcomes

The final three hypotheses predicted how adoption of a specific supply chain design drives specific supply chain outcomes. These supply chain outcomes use the Supply Chain Operations Reference model attributes of *Reliability*, *Responsiveness*, *Agility*, *Costs*, and *Asset Management Efficiency*. These hypotheses were tested using simple linear regression.

Hypothesis 9: *Lean* supply chain design

Hypothesis 9 pertained to organizations that adopt more of a *Lean* supply chain design. Specifically, the hypothesis predicted that a *Lean* supply chain design will positively correlate with *Reliability* (H_{9A}), negatively correlate with *Responsiveness* (H_{9B}), negatively correlate with *Agility* (H_{9C}), positively correlate with reduction of *Costs* (H_{9D}), and positively correlate with *Asset Management Efficiency* (H_{9E}). As there is one variable for a *Lean* supply chain design and one variable for *Reliability*, six tests were required to evaluate Hypothesis H_{9A} for each of the six sets of control conditions. Partial support for Hypothesis H_{9A} was found, as a simple linear

regression was calculated to predict *Reliability* based on *Lean* for the control condition that included both *Competition* and *Growth* for the business unit. A significant regression equation was found ($F(3,78) = 1.734$, $p < .10$) with an R^2 of .063 and predicted that *Reliability* is equal to 4.586 + .162 (*Lean*). In addition, a simple linear regression was calculated for the control condition that included *Operating Experience* of the business unit. A significant regression equation was found ($F(2,62) = 1.504$, $p < .10$) with an R^2 of .046 and predicted that *Reliability* is equal to 4.937 + .161 (*Lean*). No other conditions demonstrated a significant relationship. See Appendix K, Table 39 for the full regression results for Hypothesis H_{9A}.

Hypothesis H_{9B} predicted a negative relationship between a *Lean* supply chain design and the supply chain outcome *Responsiveness*. As with Hypothesis H_{9A}, Hypothesis H_{9B} required six tests to evaluate since there is only one variable each for the strategy type and supply chain outcome. None of the six control conditions showed the hypothesized relationship. See Appendix K, Table 40 for the full regression results for Hypothesis H_{9B}.

Hypothesis H_{9C} predicted a negative relationship between a *Lean* supply chain design and the supply chain outcome *Agility*. To analyze this relationship, 18 tests were required as *Agility* has two additional subscales *Agility* (*Agility – Upside* and *Agility – Downside*). This hypothesis found no support. See Appendix K, Table 41 for the full regression results for Hypothesis H_{9C}.

Hypothesis H_{9D} predicted a positive relationship between a *Lean* supply chain design and the reduction of the supply chain outcome *Costs*. To fully test this relationship, 18 tests were required as factor analysis revealed the existence of two additional subscales for *Costs* (*Total Supply Chain Management Costs* and *Costs of Goods Sold*). This hypothesis found no support. See Appendix K, Table 42 for the full regression results for Hypothesis H_{9D}.

Hypothesis H_{9E} predicted a positive relationship between a *Lean* supply chain design and the supply chain outcome *Asset Management Efficiency*. Hypothesis H_{9E} required six tests to evaluate since there is only one variable each for the strategy type and supply chain design. None of the six control conditions showed the hypothesized relationship. See Appendix K, Table 43 for the full regression results for Hypothesis H_{9E}.

Hypothesis 10: *Agile* Supply Chain Design

Hypothesis 10 predicted supply chain outcomes for organizations that adopt more of an *Agile* supply chain design. Specifically, an *Agile* supply chain design will positively correlate with supply chain outcomes *Reliability* (H_{10A}), *Responsiveness* (H_{10B}), and *Agility* (H_{10C}), while negatively correlating with reduction of *Costs* (H_{10D}) and *Asset Management Efficiency* (H_{10E}). As there are two variables for an *Agile* supply chain design (*Agile* and *Agile – Speed & Flexibility*) and one variable for *Reliability*, twelve tests were required to evaluate Hypothesis H_{10A} for each control condition. Hypothesis H_{10A} found no support. While significant regression equations were found for all control conditions, all equations indicated a *positive* correlation between an *Agile* supply chain design and *Reliability*. This is opposite the direction of the hypothesized relationship. See Appendix K, Table 44 for the full results for Hypothesis H_{10A}.

Hypothesis H_{10B} predicted that an *Agile* supply chain design will positively correlate with *Responsiveness*. As there are two variables for an *Agile* supply chain design (*Agile* and *Agile – Speed & Flexibility*) and one variable for *Responsiveness*, twelve tests were required to evaluate Hypothesis H_{10B} for each of the control conditions. Hypothesis H_{10B} found no support. See Appendix K, Table 45 for the full regression results for Hypothesis H_{10B}.

Hypothesis H_{10C} predicted that an *Agile* supply chain design will positively correlate with *Agility*. As there are two variables for an *Agile* supply chain design (*Agile* and *Agile – Speed &*

Flexibility) and three variables for *Agility* (*Agility*, *Agility – Upside*, and *Agility – Downside*), 36 tests were required to evaluate Hypothesis H_{10C} for each of the six control conditions. Hypothesis H_{10C} found nearly full support across all control conditions. For example, a simple linear regression was calculated to predict *Agility* based on *Agile*. A significant regression equation was found ($F(1,86) = 11.019$, $p < .01$) with an R^2 of .114 and predicted that *Agility* is equal to 2.662 + .415 (*Agile*). The lone exception that failed to find support concerned when controlling for *Operating Experience* of the business unit while testing the relationship between an *Agile* strategy type and an *Agile – Downside* supply chain outcome. See Appendix K, Table 46 for the full regression results for Hypothesis H_{10C}.

Hypothesis H_{10D} predicted that an *Agile* supply chain design will negatively correlate with the reduction of *Costs*. As there are two variables for an *Agile* supply chain design (*Agile* and *Agile – Speed & Flexibility*) and three variables for *Costs* (*Costs*, *Total Supply Chain Management Costs*, and *Costs of Goods Sold*), 36 separate tests were required to evaluate Hypothesis H_{10D} for each of the six control conditions. Hypothesis H_{10D} found no support, as nearly all relationships were actually significant and positive. This is opposite of the proposed relationship. See Appendix K, Table 47 for the full regression results for Hypothesis H_{10D}.

Hypothesis H_{10E} predicted that an *Agile* supply chain design will negatively correlate with *Asset Management Efficiency*. As there were two variables for an *Agile* supply chain design (*Agile* and *Agile – Speed & Flexibility*) and one variable for *Asset Management Efficiency*, twelve tests were required to evaluate Hypothesis H_{10E} for each of the six control conditions. Hypothesis H_{10E} found no support across any control conditions. See Appendix K, Table 48 for the full regression results for Hypothesis H_{10E}.

Hypothesis 11: *Leagile* Supply Chain Design

Hypothesis 11 pertained to organizations that adopt more of a *Leagile* supply chain design. Specifically, the different elements of the hypothesis predicted that a *Leagile* supply chain design will positively correlate with *Reliability* (H_{11A}), *Responsiveness* (H_{11B}), *Agility* (H_{11C}), reduction of *Costs* (H_{11D}), and *Asset Management Efficiency* (H_{11E}). As there was one variable for a *Leagile* supply chain design and one variable for *Reliability*, six tests were required to evaluate Hypothesis H_{11A} for each of the six control conditions. Full support for Hypothesis H_{11A} was found, as a simple linear regression was calculated to predict *Reliability* based on *Leagile*. For the condition that did not consider control variables, a significant regression equation was found ($F(1,84) = 12.477$, $p < .001$) with an R^2 of .129. Respondents predicted *Reliability* is equal to 3.570 + .491 (*Leagile*). Regression equations were identified for all other control conditions. See Appendix K, Table 49 for the full regression results for Hypothesis H_{11A}.

Hypothesis H_{11B} predicted a positive relationship between a *Leagile* supply chain design and the supply chain outcome *Responsiveness*. This hypothesis found no support. Hypothesis H_{11B} required six tests to evaluate since there was only one variable each for the strategy type and supply chain outcome. None of the six control conditions showed the hypothesized relationship. See Appendix K, Table 50 for the full regression results for Hypothesis H_{11B}.

Hypothesis H_{11C} predicted a positive relationship between a *Leagile* supply chain design and the supply chain outcome *Agility*. To fully test this relationship, 18 tests were required as factor analysis revealed the existence of two subscales for *Agility* (*Agility – Upside* and *Agility – Downside*). Nearly full support for Hypothesis H_{11C} was found, as a simple linear regression was calculated to predict *Agility* based on *Leagile*. For the condition without control variables, a significant regression equation was found ($F(1,84) = 10.531$, $p < .01$) with an R^2 of .111 and

predicted *Agility* is equal to 2.170 + .507 (*Leagile*). The lone exception that failed to find support concerned when controlling for *Operating Experience* of the business unit while testing the relationship between a *Leagile* strategy type and an *Agile – Downside* supply chain outcome. See Appendix K, Table 51 for the full regression results for Hypothesis H_{11C}.

Hypothesis H_{11D} predicted a positive relationship between a *Leagile* supply chain design and the reduction of the supply chain outcome *Costs*. To fully test this relationship, 18 tests were required as factor analysis revealed the existence of two additional subscales for *Costs* (*Total Supply Chain Management Costs* and *Costs of Goods Sold*). This hypothesis found nearly full support, as the *Leagile* supply design did have a positive association with reduction of *Costs*, *Total Supply Chain Management Costs*, and *Costs of Goods Sold*. A significant regression equation was found ($F(1,79) = 4.325$, $p < .05$), with an R^2 of .052, predicting reduction of *Costs* equal to 2.804 + .304 (*Leagile*). The lone exception is when controlling for the *Operating Experience* of the business unit. See Appendix K, Table 52 for the full regression results for Hypothesis H_{11D}.

Hypothesis H_{11E} predicted a positive relationship between a *Leagile* supply chain design and the supply chain outcome *Asset Management Efficiency*. Hypothesis H_{11E} required six tests to evaluate since there was only one variable each for the strategy type and supply chain design. Hypothesis H_{11E} found no support as none of the six control conditions showed the hypothesized relationship. See Appendix K, Table 53 for the full regression results for Hypothesis H_{11E}.

After reviewing all hypotheses predicting each supply chain design would lead to specific directional supply chain outcomes, partial support was found. A summary of results indicating degree of support for Hypotheses 9 through 11 can be found in Table 54.

Table 54. Summary of Results for Hypotheses 9 through 11

Hypothesis		**Hypothesis supported**
H_{9A}	A *Lean* supply chain design will positively correlate with *Reliability*.	Partial
H_{9B}	A Lean supply chain design will negatively correlate with *Responsiveness*.	No
H_{9C}	A *Lean* supply chain design will negatively correlate with *Agility*.	No
H_{9D}	A *Lean* supply chain design will positively correlate with reduction of *Costs*.	No
H_{9E}	A *Lean* supply chain design will positively correlate with *Asset Management Efficiency*.	No
H_{10A}	An *Agile* supply chain design will negatively correlate with *Reliability*.	No
H_{10B}	An *Agile* supply chain design will positively correlate with *Responsiveness*.	No
H_{10C}	An *Agile* supply chain design will positively correlate with *Agility*.	Full
H_{10D}	An *Agile* supply chain design will negatively correlate with reduction of *Costs*.	No
H_{10E}	An *Agile* supply chain design will negatively correlate with *Asset Management Efficiency*.	No
H_{11A}	A *Leagile* supply chain design will positively correlate with *Reliability*.	Full
H_{11B}	A *Leagile* supply chain design will positively correlate with *Responsiveness*.	No
H_{11C}	A *Leagile* supply chain design will positively correlate with *Agility*.	Full
H_{11D}	A *Leagile* supply chain design will positively correlate with reduction of *Costs*.	Partial
H_{11E}	A *Leagile* supply chain design will positively correlate with *Asset Management Efficiency*.	No

Discussion

This study built on prior research that established primary connections between corporate strategy, supply chain design, performance, and supply chain outcomes. However, prior research focused on the individual linkages between each of these constructs and did not evaluate the system as a whole. From these efforts, we know that firms that consistently apply any of the three primary Miles et al. (1978) typologies (*Defender*, *Prospector*, or *Analyzer*) should demonstrate superior financial performance as compared to those *Reactors* that fail to do so

(Desarbo et al., 2005; Miles et al., 1978). We also know that the choice of strategy does impact the chosen supply chain design as organizations seek to provide the appropriate level of customer responsiveness at the lowest possible cost (Christopher & Towill, 2002). Further, the design of a supply chain with specific focal areas of excellence drive how well that supply chain can achieve targeted supply chain outcomes (Melnyk et al., 2010; Melnyk et al., 2014).

This study aimed to connect all of these constructs through a greater understanding of the broader relationships. This greater understanding would provide insights into how the alignment of a corporate strategy and chosen supply chain design impacts both firm performance and supply chain outcomes. The first set of hypotheses predicted how each of the four corporate strategies would map to the three supply chain designs. The second set of hypotheses predicted that this aligned supply chain design would mediate the relationship between corporate strategy and firm performance. Finally, the third set of hypotheses predicted that each of the three supply chain designs would have significant correlations with the conceptually similar supply chain outcomes.

Summary of Significant Results and Theoretical Implications

Examination of the entire system of relationships between corporate strategy, supply chain design, financial performance, and supply chain outcomes revealed some key findings that partially supported the hypotheses. For the first set of hypotheses predicting the relationships between strategy types and supply chain designs, support was found for the positive associations between all *Prospector* strategies and both *Agile* supply chain designs. An additional significant relationship was found between the *Analyzer* strategy and the *Leagile* supply chain. These relationships remained strong across all control conditions, with most having *p*-values less than .01. These findings align with the theoretical descriptions for *Prospectors* and *Analyzers*, as both

strategies require the flexibility imparted by a supply chain design with at least some degree of agility. This greater agility allows these organizations to flex volumes and production cycles as they enter newer product, geographic, or customer target markets.

Additional significant findings were found between supply chain designs and supply chain outcomes. For example, all types of *Agile* supply chains showed positive correlations with all measures of *Agility* (with *p*-values primarily less than .01). These findings confirm the connection between an *Agile* supply chain designed for flexibility and the targeted *Agility* outcomes. The robust support underscores that *Agile* supply chains must demonstrate the ability to fluctuate volume both up and down with limited costs to the organization.

Further, *Leagile* supply chain designs were found to have robust, significant relationships with numerous supply chain outcomes. Specifically, *Leagile* had a positive association with *Reliability*, reduction of both *Costs* and *Costs of Goods Sold*, and all forms of *Agility.* This suggests *Leagile* supply chain designs demonstrate the dependability and lower costs typically associated with *Lean* supply chains while benefitting from the characteristic flexibility of *Agile* supply chain designs.

Additional theoretical contributions were made beyond the hypothesized relationships. For example, factor analysis of the data revealed some nuanced differences with the archetypes identified in the seminal Miles et al. (1978) research. While *Analyzers* and *Reactors* remained consistent with prior research, the *Defender* and *Prospector* variables did not. First, the *Defender* variable did not hold together as a single, unified construct. Instead, this dimension split into two aspects: one group of firms that defended their market position based on cost (*Defender – Cost Focus*) and another group of firms that defended their position with a narrow, focused product

line (*Defender – Narrow Focus*). Further, while the *Prospector* variable was itself valid, the study identified the presence of two strong factors nested within that element. One factor included firms that compete by seeking out new markets (*Prospector – New Markets),* while the other factor included *Prospectors* focused on internally aligning their organizational resources (*Prospector – Resources*) to facilitate explorations of new arenas.

Similarly, factor analysis of the data related to the five supply chain outcome attributes measured by the Supply Chain Operations Reference model (APICS, 2017) confirmed the presence of several subdimensions. For example, *Agility* can be measured as a collective construct by itself or as two subgroups: *Agility – Upside* and *Agility – Downside*. Likewise, *Costs* hold together as a single variable but can also be split into one aspect measuring administrative costs of managing the supply chain (*Total Supply Chain Management Costs)* and another that measures the costs of the materials themselves (*Costs of Goods Sold*).

Summary of Non-Significant Results and Reasoning

Strategy and Supply Chain Design

Several predicted relationships did not find confirmatory evidence. Based on the literature, *Defender* strategies most likely align with a *Lean* supply chain design. I therefore predicted that *Defender* strategies would have negative relationships with both *Agile* and *Leagile* designs. However, neither positive nor negative significant relationships were found between the two types of *Defenders* and any of the supply chain designs. In today's competitive marketplace, this may occur due to the pressure placed on organizations to have a minimum degree of flexibility that allows them to adapt to changing market needs. While self-described *Defenders* may focus on cost optimization as a primary goal, they cannot do so exclusively. As such, they must have *Agile* components within their own supply chain design. Even so, this minimal degree

of flexibility may not be enough to brand the *Defender* as *Leagile.* However, it may be enough to prevent identification of any significant correlation with *Lean*.

While support was found for the predicted positive associations between *Prospectors* and an *Agile* supply chain design as well as between *Analyzers* and *Leagile* supply chain designs, the negative associations with the others supply chain designs were not found. Instead, both strategy types were found to have no association with a *Lean* supply chain design and positive relationships with both *Agile* and *Leagile* supply chain designs. Even so, the predicted association was found to be the stronger of the two positive, significant relationships. In support, a *Prospector* was found to be more strongly associated with an *Agile* supply chain design (r = .377, $p < .01$) than a *Leagile* supply chain design (r = .277, $p < .01$), while an *Analyzer* was found to be more strongly associated with a *Leagile* supply chain design (r = .363, $p < .01$) than an *Agile* supply chain design (r = .324, $p < .001$). Given that the measurement of the *Agile* construct includes ten of the seventeen items used to calculate *Leagile*, it is not surprising to find significant collinearity between the two variables (r = .899, $p < .01$).

Although the *Reactor* strategy was predicted to not have consistent relationships with any of the three supply chain designs, significant relationships were determined. Results show significant, positive relationships between *Reactors* and both *Agile* and *Leagile* supply chain designs, with most *p*-values less than or equal to .01. Since *Reactors* do not have an established strategy, having an adaptable, flexible supply chain design such as *Agile* or *Leagile* enables the organization to quickly change direction as needed.

Supply Chain Design Influence on Relationship Between Strategy and Performance

Hypotheses 5, 6, 7, and 8 predicted that the alignment of corporate strategy types and supply chain designs suggested by Hypotheses 1, 2, 3, and 4 would lead to positive financial

performance as measured by *Market Share Gains* and *Profitability*. However, these relationships were not detected in the analysis. While the relationships between strategy and performance are clearly present, the relationships between supply chain designs and performance are tenuous. First, *Leagile* has no connection with the performance measures, while *Lean* is *negatively* associated with *Profitability* ($r = -.227$, $p < .05$). Either the lack of a relationship as seen with *Leagile* or the presence of an inverse association as seen with *Lean* would prevent these two variables from conveying any positive effect of strategy to the performance measures. Further, although *Agile* has a slight positive correlation with *Market Share Gains* ($r = .230$, $p < .05$), the mediation models do not support that *Agile* conveys an effect from strategy to performance.

Supply Chain Design and Supply Chain Outcomes

Hypotheses 9, 10, and 11 predicted that each of the three supply chain designs of *Lean, Agile,* and *Leagile* would have a directional relationship with each of the five supply chain outcomes: *Reliability, Responsiveness, Agility, Costs,* and *Asset Management Efficiency*. Not all relationships were supported. Notably, *Asset Management Efficiency* did not have any significant relationships with the variables studied. This likely results from confusion surrounding the dimension. As described in the review of the factor analysis and Cronbach's alpha, *Asset Management Efficiency* only used two of the five items initially included on the survey instrument. Even so, the Cronbach's alpha was less than .6, meaning any conclusions drawn from the analysis of the variable should be caveated. As such, *Asset Management Efficiency* will be excluded from any further commentary.

First, Hypothesis 9 concerned the relationship between a *Lean* supply chain design and each of the supply chain outcomes. Fisher's model (1997) suggests that lean supply chains are most appropriate for products with stable demand, and that the design strives for efficiency and

waste elimination so as to achieve the lowest cost (Naylor et al., 1999). As such, the lack of a relationship between a *Lean* supply chain design and reduction of *Costs* is most surprising. One possible explanation rests on the difference between actual measures of supply chain performance as compared to survey respondents' perceptions of the reliability and costs of their supply chains. For example, customer-facing associates of an organization would likely face continuous pressure to deliver lower costs and better service in a competitive marketplace. Although the organization may be improving on an absolute basis in these two areas, relative performance compared to the competition or to customers' demands could shape the survey respondents' perceptions. Further, since the organization describes itself as one focused on cost, projects aimed at lowering costs are likely the norm. This may further the perception that the current state is not at an acceptable level and costs are therefore high relative to the market. Without a reference to the change in absolute costs, this lowered perception could lead respondents to rate performance lower than they would otherwise.

Hypothesis 10 addressed the relationship between an *Agile* supply chain and the supply chain outcomes. While the relationship between *Agile* and *Agility* was robust, the predicted relationship between the *Agile* supply chain design and reduction of *Costs* did not have nearly as universal support. Instead of the predicted negative association between the two constructs, a significant, *positive* relationship was identified across multiple control conditions. Normally, the primary focus of an *Agile* supply chain concerns responsive management of products with shorter life cycles and higher product variety (Mason-Jones & Towill, 1999), inherently adding costs. Given that 80% of the survey respondents at least somewhat agreed that their organization behaved like a *Defender – Cost Focus* and therefore focus on creating large-scale, consistent operations to efficiently manage costs, these organizations likely pursue an agenda focused

simultaneously on *Agility*, *Reliability*, and *Cost.* Indeed, there is a high correlation between *Agility* and *Reliability* ($r = .313$, $p < .01$) as well as between *Agility* and *Cost* ($r = .403$, $p < .01$).

Hypothesis 11 concerned the *Leagile* supply chain design and its relationship with the five supply chain outcomes. All relationships were predicted to be both significant and positive, and most of these predictions found support. One notable exception (in addition to *Asset Management Efficiency*) concerns *Responsiveness.* Neither a positive nor negative significant relationship was found between a *Leagile* supply chain design and this outcome. A likely driver of this result concerns the slate of only four questions that comprise the *Responsiveness* scale. These questions cover the entire spectrum of supply chain practices, with one pertaining to sourcing raw materials, another to manufacturing, another for delivering product, and yet another for merchandising in a retail setting. For the 26% of respondents in Trade, Transportation, and Utilities sector that includes wholesaling, the only relevant question concerns product delivery. For the other 48% in manufacturing, the question about retailing may not be pertinent, and others in the organization may not know how long it takes to truly source raw materials. As such, results may not be completely aligned with expectations, leading to the unexpected lack of an association between a *Leagile* supply chain design and *Responsiveness.*

At a higher level, these results contribute to existing Resource-Advantage theory by suggesting that a firm's supply chain can create sustainable competitive advantages for the organization. While support for a mediating relationship was not found, direct relationships between supply chain designs and supply chain outcomes were established. Specifically, *Agile* had a positive, significant relationship with *Agility*, and *Leagile* supply chain designs were found to have positive, significant relationships with *Reliability, Agility,* and reduction of *Costs.* The suggestion by Guo et al. (2004) that performance in the demand-side areas of *Reliability* and

Agility may confer future financial benefits also finds supports, as *Agile* supply chain designs were shown to have a positive correlation with *Market Share Gains* and overall *Performance*. Further, the notion that a firm's supply chain serves as an inimitable resource capable of providing a sustainable competitive advantage (Priem & Swink, 2012) over its more reactive rivals (Mason-Jones & Towill, 1999) finds full or partial support in that all strategy types except *Reactors* have a significant, positive correlation with *Profitability*.

Practical Implications

My research explored the relationships between firm strategy, supply chain design, firm performance, and supply chain outcomes. First, I found that *Defenders* are agnostic to *Lean*, *Agile*, or *Leagile* supply chain designs, while *Prospectors* and *Analyzers* adopt both *Agile* and *Leagile* approaches. Managers wishing to enter a new market based on products or geography should strongly consider adopting a supply chain with agile characteristics to mirror this success.

Further, firms committed to any of the three primary strategies perceive themselves to have better performance in terms of profitability and market share gains. *Defenders*, *Prospectors*, and *Analyzers* all show a positive, significant relationship with firm performance. In contrast, *Reactors* that fail to pursue a singular strategy have no predictable relationship with profitability. The primary lesson for managers is that consistent adherence to a single strategy that aligns the various functions within an organization, regardless of which type, has a stronger likelihood of generating financial success than when opting to continuously change the corporate strategy.

Similarly, the more a firm pursues any strategy, the greater the performance with the customer-facing supply chain outcome metrics of *Reliability*, *Responsiveness*, and *Agility*. Internal supply chain measures are not as predictable, with no strategy correlating with improved

Asset Management Efficiency. Further, only *Analyzers* and *Prospectors* have better costs. Based on these results, *Defenders* may not have better costs than rivals pursuing alternative strategies.

Although relationships between supply chain designs and firm performance are not robust, there are greater connections between supply chain designs and supply chain outcomes. *Agile* supply chains support market share gains, profitability, and overall performance, while *Lean* designs show greater profitability and overall performance. Even so, firms that adopt more aspects of a *Lean* supply chain design do not perceive themselves to have improved costs. Those implementing *Leagile* and *Agile* designs have greater reliability, agility, and costs, while none of the designs yield greater customer responsiveness nor improved asset management efficiency.

I also explored how supply chain design influences the impact of strategy on both perceived firm financial performance and supply chain outcomes. Unfortunately, supply chain design does not play a role in conveying the effect of strategy to firm performance. However, with regards to supply chain outcomes, both *Prospectors* focused on new markets and *Analyzers* using a *Leagile* supply chain do have greater upside *Agility* when controlling for the *Scope* of the business unit. In addition, *Analyzers* using an *Agile* supply chain demonstrate greater *Agility*.

Limitations

There are several limitations to this study. The first limitation regards the sample size. Unfortunately, only 95 sufficiently complete surveys were gathered. Due to the small sample size, this allows for the detection of an effect size of .25 or greater (assuming a one-tailed test given directional hypotheses, probability of a Type I error of .05, and probability of a Type II error of .80). As such, smaller effect sizes, while present, may not have been detected and therefore could have led to Type II errors.

Second, the sample itself might be considered questionable. Although many attempts were made to recruit respondents from large LinkedIn groups dedicated to supply chain and operations management, those that participated could have conveniently pulled from my personal LinkedIn network. Further, these could have heavily been nested within a single company or industry. As individuals' names were not logged, assessing the actual impact of this concern is not possible. However, my network of contacts spans multiple industries due to my own work experience in multiple companies across disparate industries as well as heavy involvement in trade associations with a diverse population. Based on anecdotal feedback and confirmations that participants from a wide range of industries completed the survey, I believe the potential impact of this concern is limited.

The next issue concerns the adaptation of scales for use in this study in a novel manner. First, the survey used for the Miles et al. (1978) strategy typology is typically presented in a scenario format. The scale developed by Conant et al. (1990) asks respondents to choose the description that best matches their organization for each of the 11 adaptive cycle dimensions of the Miles et al. (1978) typology. Each dimension has four possible responses – one for each strategy typology (*Defender*, *Prospector*, *Analyzer*, and *Reactor*) – resulting in 44 descriptive statements. For this study, respondents indicated on a 7-point Likert-like scale how likely each of the 44 statements described their organization. Although each metric underwent factor analysis followed by review of Cronbach's alpha to validate internal consistency, this specific format has not been previously operationalized. As such, conclusions may not be sufficiently validated.

Another adaptation concerns the assessment of supply chain outcomes using the five attributes of the Supply Chain Operations Reference model. The original SCOR questions require numerical responses that are logged into the APICS benchmarking system. For the

purposes of this study, though, questions were modified to gather respondents' perceptions of how well their organizations performed on each dimension relative to competitors. Again, a 7-point Likert-like scale was used. Although each metric underwent factor analysis followed by the calculation of a Cronbach's alpha to validate internal consistency, this version of the scale that measures perceptions as opposed to absolute values has not been used in prior research. Again, this impacts the validity of any conclusions drawn from this study.

More generally, the use of perception of performance as opposed to metrics providing absolute levels of performance may not be appropriate in all conditions. With the two scales adapted to measure strategy type and SCOR outcomes, reliance on perception might skew results to the vantage point of a specific individual responding to a questionnaire. Answers could vary simply as a function of the respondent's position within the organization or their organization's position within the supply chain. Each vantage point would be molded by their relative exposure to strategy formulation and deployment as well as their proximity to customer feedback. Further, these varying experiences could shape perception so that two members of the same organization could offer conflicting assessments. Due to the anonymous nature of the study design, the degree to which this phenomenon impacted the results of this study cannot truly be assessed.

Further, the questions used by the SCOR model to assess performance along the five supply chain attributes address the broader supply chain. These areas span the spectrum of supply chain activities and include sourcing raw materials, manufacturing finished goods, delivering goods to customers, and even retailing. For those companies that do not operate across the entire supply chain, some questions may seem confusing. This could also have led to inappropriate responses.

Future Research Directions

There are multiple opportunities to expand on this research. For example, repeating this study with a larger sample size with a diverse group of respondents spanning multiple industries would allow detection of smaller effect sizes. A larger sample size would also allow for inclusion of more control variables and multiple combinations of those variables to see if these combinations generated variations in results. One such control variable could include firm size, measured in terms of either revenue or employee count.

This study employed two novel assessments of the major constructs evaluated within the model. First, instead of mapping each firm to a specific strategy type using the paragraph form found in Conant et al. (1990), each respondent indicated the degree to which their firm pursued each strategic element. Consequently, each firm had a composite score of how much they resembled each archetypical strategy. Given that this was the first time that the strategy type was measured in this way, operationalizing this same scale in future studies will give greater credence to its validity.

The second novel assessment concerned the method of measuring the supply chain outcomes. Prior studies assess SCOR attributes using absolute performance values. This study instead asked respondents for their perceptions of their firms' performance for each of these supply chain outcomes using a relative, 7-point Likert-like scale. Doing so expanded inclusion of responses, as many members of management may not be privy to or be willing to disclose absolute metrics. However, these same people still understand their relative performance as compared to competitors. As with the strategy types, this is the first known use of this type of scale. As such, future operationalizations of this scale will provide confirmatory evidence of its use as a valid measure.

An additional research area concerns the supply chain design. This study assessed to what degree respondents felt their organizations aligned with each of the three designs, whether *Lean, Agile,* or *Leagile*. However, the *Lean* supply chains assessed in this study did not have a firm perceived positive connection with reduction of costs. Given that a primary focus of a lean supply chain is to drive cost out of the system, this finding was surprising and should be further investigated. As a first area of exploration, a study could seek to determine whether the lack of perception of low costs is actually due to insufficiently low absolute costs or instead due to extreme market pressure driving price erosion. In other words, costs may be low and continuing to go lower, yet still not low enough to allow the firm to compete. Other potential explanations should also be considered.

Another possible area of research would be to use the standard performance metrics instead of respondents' perceptions. This would include any of the metrics gathered for financial performance such as market share gains and profitability in addition to the metrics gathered for the five attributes from the Supply Chain Operations Reference model. While this might be challenging as respondents would be reluctant to share this information, measuring actual values would at least partially mitigate concerns related to reliability of respondents' perceptions.

Finally, future research could explore additional supply chain outcomes beyond SCOR. For example, the emerging social awareness requiring consideration of a supply chain's environmental impact opens a new area of research. It would be interesting to know if companies that pursue "green" performance metrics as a sustainable competitive advantage also find comparable financial success. Future research could determine which corporate strategy types are most appropriate for organizations pursuing this specific outcome.

Conclusion

The purpose of this study was to determine whether the alignment between an organization's strategy type and supply chain design has a positive impact on financial performance and targeted supply chain outcomes. Through improved understanding of how each combination of strategy type and supply chain design drives financial and supply chain performance, management can make appropriate decisions as they attempt to create sustainable competitive advantages within the marketplace. To evaluate these relationships, this study employed a quantitative analysis based on a field survey of management professionals with understanding of their corporate strategy, supply chain design, and relative performance as compared to competitors within the broader marketplace.

Multiple relationships of varying complexity between strategy type, supply chain design, financial performance, and supply chain outcomes were explored. Altogether, there were 35 hypotheses distributed across three conceptual areas. Twelve hypotheses linked strategy type and supply chain design, eight hypotheses proposed mediation of strategy type by supply chain design on firm performance, and fifteen hypotheses predicted the directional relationship between each supply chain design and each supply chain outcome.

While the proposed mediation model did not find confirmatory evidence, partial support was found supporting a portion of the first and last blocks of hypotheses. This evidence shows clear relationships between some strategy types and supply chain designs. Specifically, both *Prospectors* and *Analyzers* are more likely to adopt *Agile* or *Leagile* supply chain designs, while at the same time *Prospectors* are unlikely to adopt *Lean* supply chain designs. In contrast, *Reactors* are neither more nor less likely to implement a *Lean* or *Leagile* supply chain design. Further, *Agile* and *Leagile* supply chain designs positively correlate with *Reliability, Agility,* and *Cost.* None of the remaining hypotheses found support. More research must be done to provide

further evidence for how to most effectively leverage the appropriate supply chain design as a sustainable competitive advantage that links the overall firm strategy with the targeted financial and supply chain outcomes.

References

Agarwal, A., Shankar, R., & Tiwari, M. (2006). Modeling the metrics of lean, agile and leagile supply chain: An ANP-based approach. *European Journal of Operational Research, 173*(1), 211-225.

APICS. (2017). Supply Chain Operations Reference Model.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of management, 17*(1), 99-120.

Barney, J. B. (2012). Purchasing, Supply Chain Management and Sustained Competitive Advantage: The Relevance of Resource-based Theory. *Journal of Supply Chain Management, 48*(2), 3-6. doi:10.1111/j.1745-493X.2012.03265.x

Carter, C. R., Rogers, D. S., & Choi, T. Y. (2015). Toward the theory of the supply chain. *Journal of Supply Chain Management, 51*(2), 89-97.

Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long range planning, 43*(2-3), 195-215.

Chandler, A. D. (1962). Strategy and structure: Chapters in the history of the American enterprise. *Massachusetts Institute of Technology Cambridge*.

Christopher, M., & Towill, D. R. (2002). Developing market specific supply chain strategies. *The international journal of logistics management, 13*(1), 1-14.

CNBC. (2008). The 'Supply Chain': Stocks That Beat the S&P. Retrieved from https://www.cnbc.com/id/22596390

Conant, J. S., Mokwa, M. P., & Varadarajan, P. R. (1990). Strategic types, distinctive marketing competencies and organizational performance: a multiple measures-based study. *Strategic management journal, 11*(5), 365-383.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika, 16*(3), 297-334.

Desarbo, W. S., Di Benedetto, C. A., Song, M., & Sinha, I. (2005). Revisiting the miles and snow strategic framework: Uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance. *Strategic Management Journal, 26*(1), 47-74.

Ellram, L. M., & Cooper, M. C. (1990). Supply chain management, partnership, and the shipper-third party relationship. *The International Journal of Logistics Management, 1*(2), 1-10.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods, 41*(4), 1149-1160.

Fisher, M. L. (1997). What is the right supply chain for your product? *Harvard Business Review, 75*(2), 105-&.

Fullerton, R. R., & Wempe, W. F. (2009). Lean manufacturing, non-financial performance measures, and financial performance. *International Journal of Operations & Production Management, 29*(3), 214-240.

Guo, C., Kumar, A., & Jiraporn, P. (2004). Customer satisfaction and profitability: is there a lagged effect? *Journal of strategic marketing, 12*(3), 129-144.

Hambrick, D. C. (1983). Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of Management journal, 26*(1), 5-26.

Hambrick, D. C., & Chen, M.-J. (2008). New academic fields as admittance-seeking social movements: The case of strategic management. *Academy of Management Review, 33*(1), 32-54.

Hoskisson, R. E., Wan, W. P., Yiu, D., & Hitt, M. A. (1999). Theory and research in strategic management: Swings of a pendulum. *Journal of management, 25*(3), 417-456.

Hunt, S. D., & Davis, D. F. (2008). Grounding supply chain management in resource-advantage theory. *Journal of Supply Chain Management, 44*(1), 10-21.

Hunt, S. D., & Davis, D. F. (2012). Grounding supply chain management in resource-advantage theory: in defense of a resource-based view of the firm. *Journal of Supply Chain Management, 48*(2), 14-20.

Jones, T. C., & Riley, D. W. (1985). Using inventory for competitive advantage through supply chain management. *International Journal of Physical Distribution & Materials Management, 15*(5), 16-26.

Lambert, D. M. (2008). *Supply chain management: processes, partnerships, performance*: Supply Chain Management Inst.

Leuschner, R., Rogers, D. S., & Charvet, F. F. (2013). A meta-analysis of supply chain integration and firm performance. *Journal of Supply Chain Management, 49*(2), 34-57.

Lo, S. M., & Power, D. (2010). An empirical investigation of the relationship between product nature and supply chain strategy. *Supply Chain Management: An International Journal, 15*(2), 139-153.

Martínez Sánchez, A., & Pérez Pérez, M. (2005). Supply chain flexibility and firm performance: a conceptual model and empirical study in the automotive industry. *International Journal of Operations & Production Management, 25*(7), 681-700.

Mason-Jones, R., Naylor, B., & Towill, D. R. (2000). Lean, agile or leagile? Matching your supply chain to the marketplace. *International Journal of Production Research, 38*(17), 4061-4070.

Mason-Jones, R., & Towill, D. R. (1999). Total cycle time compression and the agile supply chain. *International Journal of Production Economics, 62*(1-2), 61-73. doi:10.1016/s0925-5273(98)00221-7

Melnyk, S. A., Davis, E. W., Spekman, R. E., & Sandor, J. (2010). Outcome-driven supply chains. *MIT Sloan Management Review, 51*(2), 33.

Melnyk, S. A., Narasimhan, R., & DeCampos, H. A. (2014). Supply chain design: issues, challenges, frameworks and solutions. In: Taylor & Francis.

Mentzer, J. T., Flint, D. J., & Kent, J. L. (1999). Developing a logistics service quality scale. *Journal of Business logistics, 20*(1), 9.

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, J., Henry J. (1978). Organizational strategy, structure, and process. *Academy of management review, 3*(3), 546-562.

Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic management journal, 30*(8), 909-920.

Nag, R., Hambrick, D. C., & Chen, M. J. (2007). What is strategic management, really? Inductive derivation of a consensus definition of the field. *Strategic management journal, 28*(9), 935-955.

Naylor, J. B., Naim, M. M., & Berry, D. (1999). Leagility: Integrating the lean and agile manufacturing paradigms in the total supply chain. *International Journal of production economics, 62*(1-2), 107-118.

Nunnally, J. (1978). Psychometric theory. *New York: McGraw-Hill*.

Oliver, R. K., & Webber, M. D. (1982). Supply-chain management: logistics catches up with strategy. *Outlook, 5*(1), 42-47.

Penrose, E. T. (1959). The theory of the growth ofthe firm. *New York: Sharpe*.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic management journal, 14*(3), 179-191.

Porter, M. E. (1979). How competitive forces shape strategy. *Harvard Business Review*.

Porter, M. E. (1980). Corporate strategy. *New York. New York, NY*.

Porter, M. E. (1996). What is Strategy? *Harvard Business Review, 74*(6), 61-78.

Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard business review, 86*(1), 25-40.

Priem, R. L., Butler, J. E., & Li, S. (2013). Toward reimagining strategy research: retrospection and prospection on the 2011 AMR decade award article. *Academy of Management Review, 38*(4), 471-489.

Priem, R. L., Li, S., & Carr, J. C. (2012). Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research. *Journal of management, 38*(1), 346-374.

Priem, R. L., & Swink, M. (2012). A demand-side perspective on supply chain management. *Journal of Supply Chain Management, 48*(2), 7-13.

Ramsay, J. (2001). The resource based perspective, rents, and purchasing's contribution to sustainable competitive advantage. *Journal of Supply Chain Management, 37*(2), 38-47.

Ronda-Pupo, G. A., & Guerras-Martin, L. Á. (2012). Dynamics of the evolution of the strategy concept 1962–2008: a co-word analysis. *Strategic Management Journal, 33*(2), 162-188.

Ross, D. F., & Rogers, J. (1996). *Distribution: planning and control*: Springer.

Segev, E. (1987). Strategy, strategy-making, and performance in a business game. *Strategic Management Journal, 8*(6), 565-577.

Segev, E. (1989). A systematic comparative analysis and synthesis of two business-level strategic typologies. *Strategic Management Journal, 10*(5), 487-505.

Selldin, E., & Olhager, J. (2007). Linking products with supply chains: testing Fisher's model. *Supply Chain Management-an International Journal, 12*(1), 42-51. doi:10.1108/13598540710724392

Selznick, P. (1957). *Leadership in administration: A sociological interpretation.* Evanston, Ill: Row, Peterson.

Sethi, R., & Iqbal, Z. (2008). Stage-gate controls, learning failure, and adverse effect on novel new products. *Journal of Marketing, 72*(1), 118-134.

Shortell, S. M., & Zajac, E. J. (1990). Perceptual and Archival Measures of Miles and Snow's Strategic Types: A Comprehensive Assessment of Reliability and Validity. *Academy of Management Journal, 33*(4), 817.

Snow, C. C., & Hambrick, D. C. (1980). Measuring organizational strategies: Some theoretical and methodological problems. *Academy of Management Review, 5*(4), 527-538.

Tabachnick, B. G., & Fidell, L. S. (2001). Principal components and factor analysis. *Using multivariate statistics, 4*, 582-633.

von Massow, M., & Canbolat, M. (2014). A strategic decision framework for a value added supply chain. *International journal of production research, 52*(7), 1940-1955.

Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of management, 37*(4), 1019-1042.

Appendix A. Organizational and Personal Profile Survey Questions

Please answer the following questions regarding you and your organization.

1. Which option best describes your type of business?
   - Construction
   - Education and Health Services
   - Financial Activities
   - Information
   - Leisure and Hospitality
   - Manufacturing
   - Natural Resources and Mining
   - Other Services (Except Public Administration)
   - Professional and Business Services
   - Trade, Transportation, and Utilities (Including Wholesale, Retail, and Warehousing)
   - Other _____

2. What is last year's annual sales of your business unit?
   - Under $100,000
   - $100,000 to $500,000
   - $500,000 to $1 million
   - $1,000,001 to $10 million
   - $10,000,001 to $50 million
   - $50,000,001 to $100 million
   - $100,000,001 to $1 billion
   - More than $1 billion

3. What is last year's annual sales of your product unit?
   - Under $100,000
   - $100,000 to $500,000
   - $500,000 to $1 million
   - $1,000,001 to $10 million
   - $10,000,001 to $50 million
   - $50,000,001 to $100 million
   - $100,000,001 to $1 billion
   - More than $1 billion

4. How many employees does your business unit currently have?
   - Under 100
   - 100 to 500
   - 501 to 1,000
   - 1,001 to 5,000
   - 5,001 to 10,000
   - 10,001 to 20,000
   - More than 20,000

5. How many years has your business unit been operating in its current markets and technologies?

6. Indicate the amount of work experience you have in each of the following categories:
   - Years working at full-time jobs
   - Years working in Supply Chain Management
   - Years working at your current employer

7. Which of the following most closely matches your job title?
    - Entry Level
    - Analyst/Associate
    - Manager/Senior Manager
    - Plant Manager
    - Director/Senior Director
    - Vice President
    - Senior Vice President
    - C level executive (CIO, CTO, COO, CMO, etc.)
    - President or CEO
    - Owner
    - Other _____

8. What is your department?

9. What is your age (in years)?

10. How do you identify your gender?

Appendix B. Perceived Firm Performance Survey Questions

*Adapted from (Morgan et al., 2009).

Using the scale below, please evaluate the performance of your major line of business over the past year relative to your major competitors.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. Market share growth relative to competition effectiveness
2. Acquiring new customers
3. Increasing sales to current customers
4. Growth in sales revenue
5. Business unit profitability
6. Return on investment (ROI)
7. Return on sales (ROS)
8. Reaching financial goals

Appendix C. Control Variables: Environmental Volatility, Competitive Intensity & Environmental Munificence Survey Questions

*Adapted from Sethi and Iqbal (2008).

Using the scale below, please indicate to what extent you agree with the following statements regarding the <u>environment in which your business unit operates</u>.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. It is difficult to predict how customers' needs and requirements will evolve in our markets.
2. It is difficult to forecast competitive actions.
3. Generally, it is difficult to understand how the market will change.
4. There is a great deal of uncertainty in our markets.
5. The technology in our industry is changing rapidly.
6. Technological changes provide big opportunities in our industry.
7. A large number of new product ideas have been made possible through technological breakthroughs in our industry.
8. Technological developments in our industry are rather minor.
9. Competition in our markets is cut-throat.
10. Anything that one competitor can offer, others can match readily.
11. One hears of some new competitive move almost every day.
12. Our competitors are relatively weak.
13. The markets for our business-unit are growing strongly.
14. The profit margins for our business unit are growing rapidly.
15. Our business unit is unable to capture the returns on its value-added components.
16. Our business unit’s core customer group is expanding.

Appendix D. Strategic Orientation Multi-Item Scale Survey Questions
*Adapted from Conant et al. (1990).

Using the scale below, please indicate to what extent you agree with the following statements that describe the strategy of your business unit.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Prospector

1. In comparison to competitors, the services which we provide to our customers are best characterized as more innovative, continually changing and broader in nature throughout the organization and marketplace.
2. In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which has a reputation for being innovative and creative.
3. In contrast to competitors, my organization continuously monitors the marketplace.
4. In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of aggressively entering into new markets with new types of service offerings and programs.
5. One of the most important goals in this organization in comparison to competitors is our dedication and commitment to insure that the people, resources, and equipment required to develop new services and new markets are available and accessible.
6. In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as broad and entrepreneurial. Their skills are diverse, flexible, and enable change to be created.
7. The one thing that protects my organization from competitors is that we are able to consistently develop new services and new markets.

8. More so than many other competitors, our management staff tends to concentrate on developing new services and expanding into new markets or market segments.
9. In contrast to many other competitors, my organization prepares for the future by identifying trends and opportunities in the marketplace which can result in the creation of service offering or programs which are new to the industry or which reach new markets.
10. In comparison to competitors, the structure of my organization is service or market oriented (i.e. organized by customer geography or product line).
11. Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as decentralized and participatory encouraging many organizational members to be involved.

Analyzer

1. In comparison to competitors, the services which we provide to our customers are best characterized as fairly stable in certain units/departments and markets while innovative in other units/departments and markets.
2. In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which adopts new ideas and innovations, even after careful analysis.
3. The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as average. We spend a reasonable amount of time monitoring the marketplace.
4. In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of assertively penetrating more deeply into markets we currently serve, while adopting new services only after a very careful review of their potential.

5. One of the most important goals in this organization in comparison to competitors is our dedication and commitment to analyze our costs and revenues carefully, to keep costs under control, and to selectively generate new services or enter new markets.
6. In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as analytical. Their skills enable them to both identify trends and then develop new service offerings or markets.
7. The one thing that protects my organization from competitors is that we are able to carefully analyze emerging trends and adopt only those which have proven potential.
8. More so than many other competitors, our management staff tends to concentrate on analyzing opportunities in the marketplace and selecting only those opportunities with proven potential, while protecting a secure financial position.
9. In contrast to many other competitors, my organization prepares for the future by identifying those trends in the industry which competitors have proven possess long-term potential while also solving problems related to our current service offerings and our current customers' needs.
10. In comparison to competitors, the structure of my organization is primarily functional (departmental) in nature; however, a service or market-oriented structure does exist in newer or larger service offering areas.
11. Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as centralized in more established service areas and more participatory in newer service areas.

Defender

1. In comparison to competitors, the services which we provide to our customers are best characterized as well focused, relatively stable and consistently defined throughout the organization and marketplace.
2. In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which offers fewer, selective services which are high in quality.
3. The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as minimal. We really don't spend much time monitoring the marketplace.
4. In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of concentrating on more fully developing those markets which we currently serve.
5. One of the most important goals in this organization in comparison to competitors is our dedication and commitment to keep costs under control.
6. In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as specialized. Their skills are concentrated into one, or a few, specific areas.
7. The one thing that protects my organization from competitors is that we are able to do a limited number of things exceptionally well.
8. More so than many other competitors, our management staff tends to concentrate on maintaining a secure financial position through cost and quality control measures.
9. In contrast to many other competitors, my organization prepares for the future by identifying those problems which, if solved, will maintain and then improve our current service offerings and market position.

10. In comparison to competitors, the structure of my organization is functional in nature (i.e. organized by department—marketing, accounting, human resources, etc.).
11. Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as highly centralized and primarily the responsibility of senior management.

Reactor

1. In comparison to competitors, the services which we provide to our customers are best characterized as in a state of transition, and largely based on responding to opportunities or threats form the marketplace or environment.
2. In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which reacts to opportunities or threats in the marketplace to maintain or enhance our position.
3. The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as sporadic. We sometimes spend a great deal of time and at other times spend little time monitoring the marketplace.
4. In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of responding to the pressures of the marketplace by taking few risks.
5. One of the most important goals in this organization, in comparison to competitors, is our dedication and commitment to make sure that we guard against critical threats by taking whatever action is necessary.

6. In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as fluid. Their skills are related to the near term demands of the marketplace.
7. The one thing that protects my organization from competitors is that we are able to respond to trends even though they may possess only moderate potential as they arise.
8. More so than many other competitors, our management staff tends to concentrate on activities or business functions which most need attention given the opportunities or problems we currently confront.
9. In contrast to many other competitors, my organization prepares for the future by identifying the best possible solutions to those problems or challenges which require immediate attention.
10. In comparison to competitors, the structure of my organization is continually changing to enable us to meet opportunities and solve problems as they arise.
11. Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as heavily oriented toward those reporting requirements which demand immediate attention.

Knowledge of Strategy

1. Please indicate how knowledgeable you are about your corporate strategy.
2. Please indicate how knowledgeable you are about your business unit strategy.
3. Please indicate how knowledgeable you are about your product category strategy.
4. Your product category strategy aligns with your business unit strategy.

Appendix E. Supply Chain Design Survey Questions

*Adapted from Lo and Power (2010).

Using the scale below, please indicate to what extent you agree that each statement describes the actual implemented supply chain design for the product category for which you are responding.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. Our primary purpose in dealings with partners is pursuing lowest total cost.
2. Our primary purpose in dealings with partners is pursuing quickest response to customers' demand.
3. Our manufacturing focus/inventory strategy in dealings with partners is maintaining high average utilization rate.
4. Our manufacturing focus/inventory strategy in dealings with partners is generating low turns and maximizing inventory throughout the chain.
5. Our manufacturing focus/inventory strategy in dealings with partners is developing the use of excess buffer production capacity.
6. Our manufacturing focus/inventory strategy in dealings with partners is developing significant buffer stocks of parts or finished goods.
7. Our lead-time focus in dealings with partners is shortening delivery lead-time as long as it does not increase cost.
8. Our lead-time focus in dealings with partners is investing aggressively in ways to reduce delivery lead-time irrespective of cost.
9. Our product design strategy is focused on producing low cost product.
10. Our product-design strategy is using modular design.

11. Our product-design strategy is to postpone product differentiation for as long as possible.

12. Our approach to choosing suppliers is primarily based on their cost.

13. Our approach to choosing suppliers is primarily based on their quality.

14. Our approach to choosing suppliers is primarily based on their delivery speed.

15. Our approach to choosing suppliers is primarily based on their product flexibility.

16. Our approach to choosing suppliers is primarily based on their volume flexibility.

17. Our approach to choosing suppliers is primarily based on their process flexibility.

Appendix F. Supply Chain Outcomes Survey Questions

*Adapted from the Supply Chain Operations Reference (SCOR) model (APICS, 2017).

Using the scale below, please indicate to what extent you agree with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Reliability

1. Orders of our products are received by the customer in the quantities committed.
2. Orders of our products are **NOT** fulfilled on the customer's originally committed date.
3. Orders of our products are delivered to the customer on-time and with accurate documentation supporting the order, including packing slips, bills of lading, invoices, etc.
4. Orders of our products are delivered to the customer in an undamaged state that meet specifications, have the correct configuration, are faultlessly installed (as applicable), and accepted by the customer.

Responsiveness

1. The average time required to source materials is long compared to competitors. (Sourcing includes the time to identify, select, and negotiate with suppliers, scheduling delivery and receiving product, and then authorizing payment to the supplier.)
2. The average time required to produce product is long compared to competitors. Production time includes all time for engineering development, scheduling of production time, issuing material to production orders, the manufacturing process, packaging, staging finished goods, and releasing product for shipment or storage.
3. The average time required to deliver product is long compared to competitors. Delivery time includes all time required to build loads, route shipments, select carriers and rates,

receive product from manufacturing, pick the order, pack the order, load the vehicle, and ship the product.

4. The average time required to acquire, merchandise, and sell finished goods at a retail store is **NOT** long compared to competitors.

Agility

1. We can significantly increase volumes of raw materials acquired and received within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
2. We can significantly increase production volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
3. We can significantly increase delivery volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
4. We can **NOT** significantly increase volumes of raw materials returned to suppliers within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
5. We can significantly manage an increase in volumes of finished goods returned by customers within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
6. We can significantly decrease volumes of raw materials acquired and received within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.
7. We can significantly decrease production volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.

8. We can significantly decrease delivery volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.

Costs

1. The costs associated with planning our products are high compared to competitors.
2. The costs associated with sourcing our products are low compared to competitors.
3. The costs associated with manufacturing our products are low compared to competitors.
4. The average costs associated with delivering our products is low compared to competitors.
5. The average costs associated with returns of our products and sourced materials are low compared to competitors.
6. The average direct labor costs spent on production are low compared to competitors.
7. The average costs of material sourced from suppliers are high compared to competitors.
8. The average indirect spend for materials and services is low compared to competitors.

Asset Management Efficiency

1. The length of time (in days) from when a sale is made until cash for it is received from customers is high compared to competitors.
2. The amount of inventory as expressed in terms of days of sales is low compared to competitors.
3. The length of time (in days) from purchasing materials, labor, and/or conversion resources until cash payments must be made is high relative to competitors.
4. Operating revenue generated from supply chain activities is high compared to competitors.
5. The costs associated with planning, sourcing, manufacturing, delivering, and returns is high compared to competitors.

Appendix G. Power Analysis

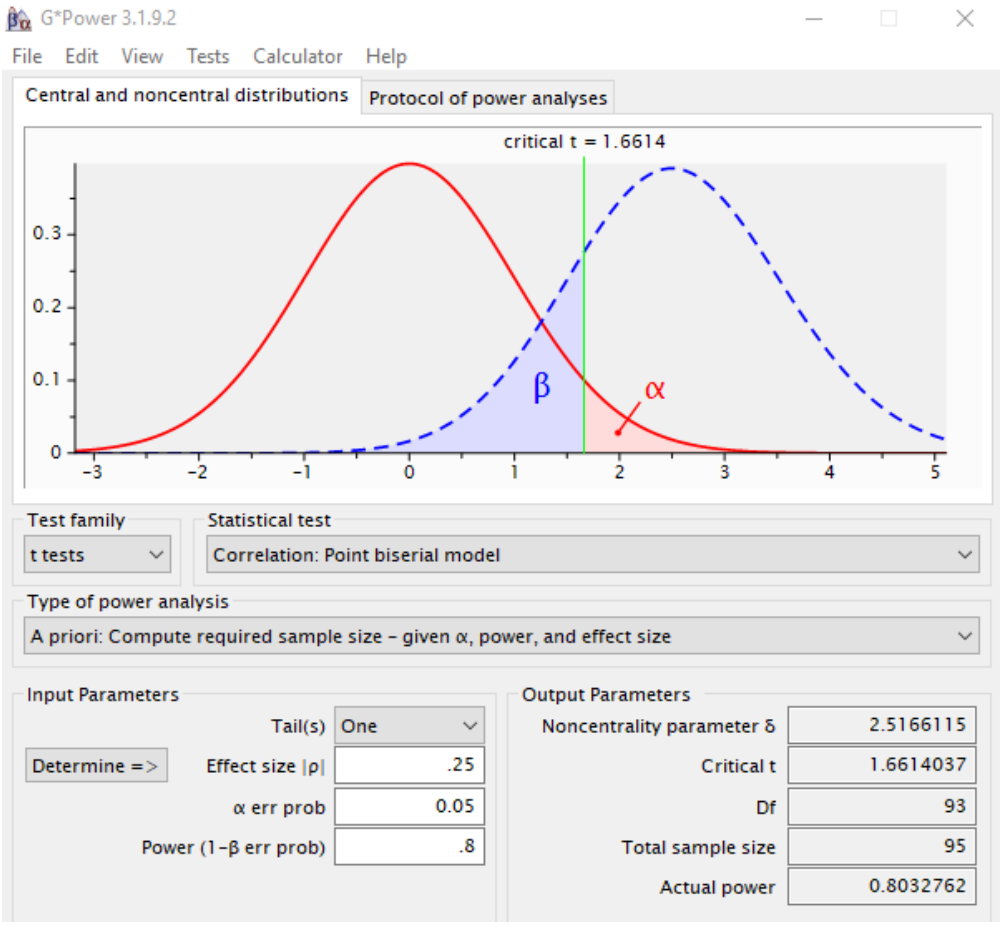

FIGURE 2. POWER ANALYSIS INDICATING EFFECT SIZE THAT CAN BE DETECTED WITH A SAMPLE SIZE OF 95 (FAUL, ERDFELDER, BUCHNER, & LANG, 2009).

Appendix H. Descriptive Statistics

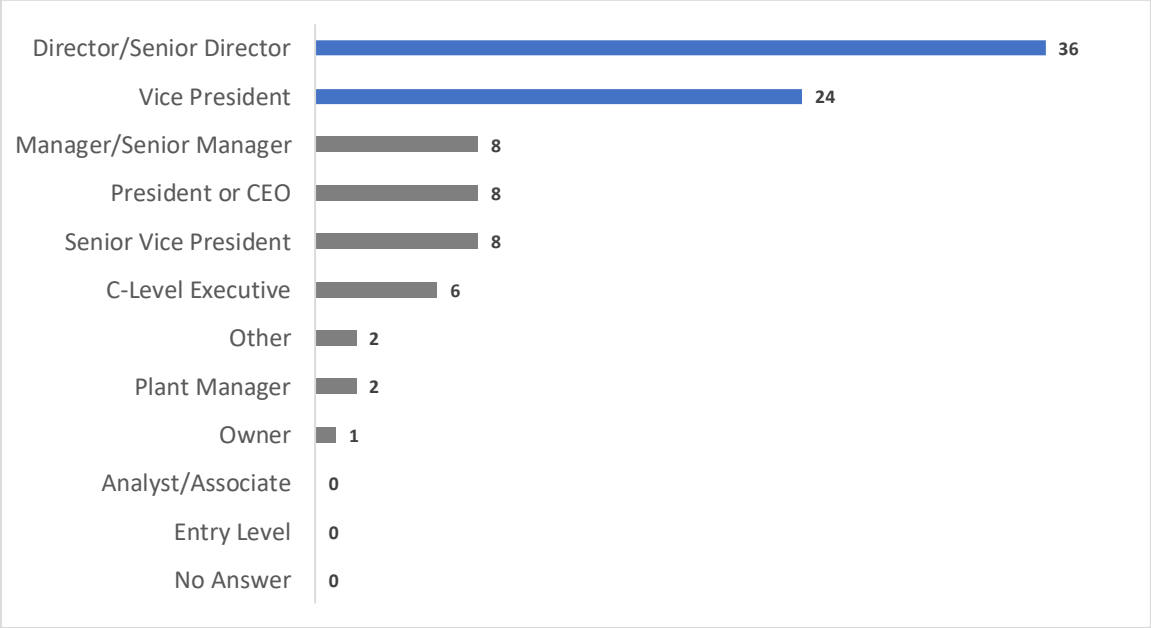

FIGURE 3. POSITION TITLES OF RESPONDENTS.

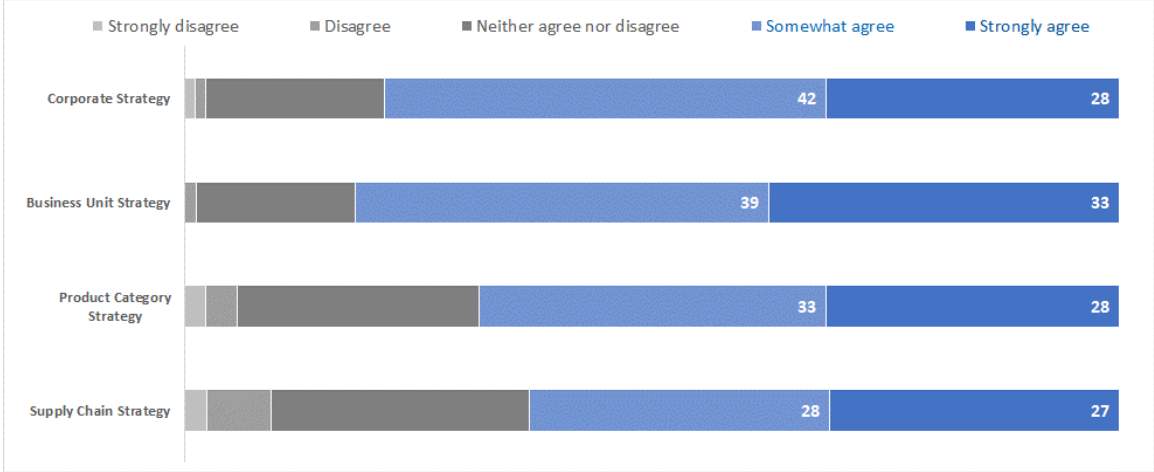

FIGURE 4. RESPONDENTS' DEGREE OF UNDERSTANDING OF THEIR ORGANIZATIONS' VARIOUS STRATEGIES.

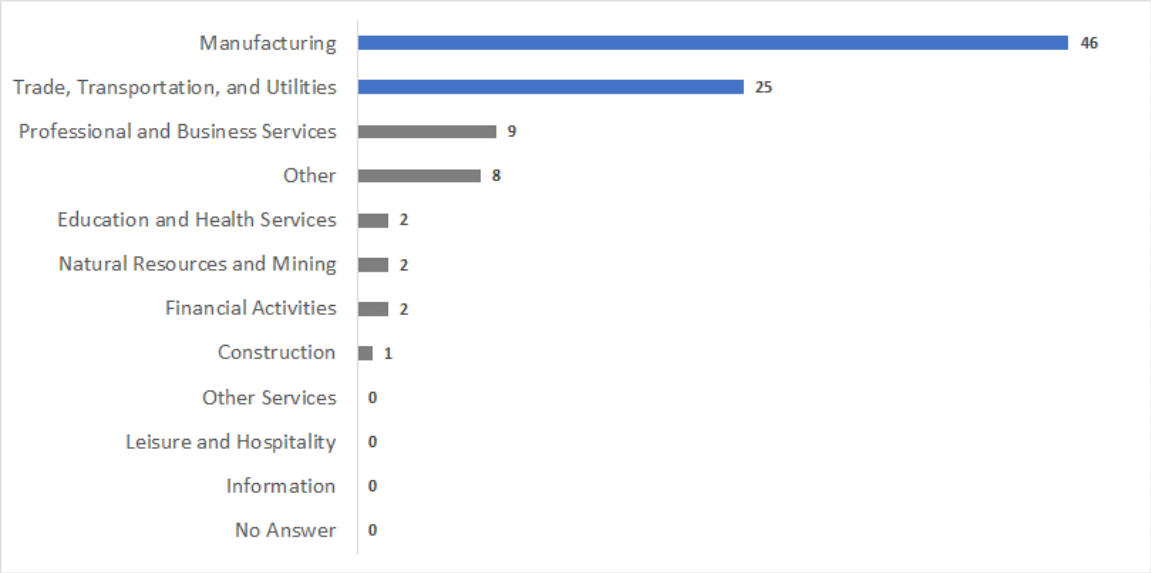

FIGURE 5. INDUSTRY PROFILE USING CATEGORIES FROM THE UNITED STATES DEPARTMENT OF LABOR AND STATISTICS.

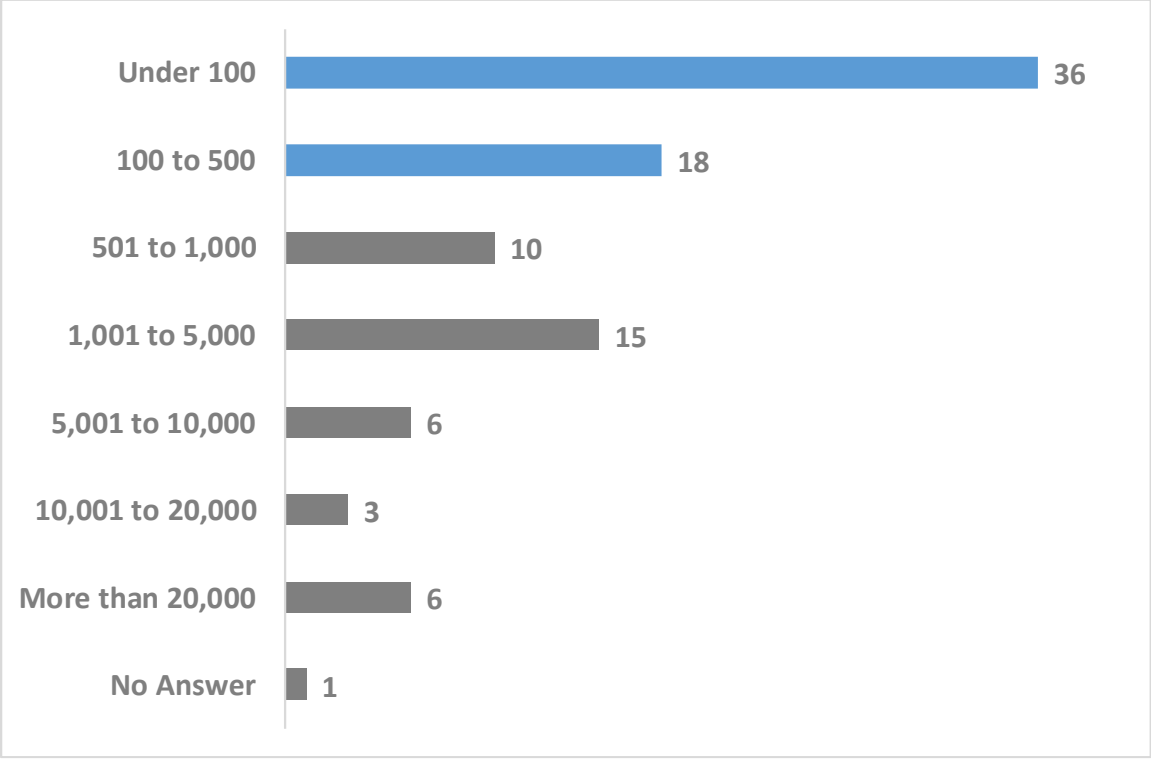

FIGURE 6. SIZE OF FIRMS BASED ON NUMBER OF EMPLOYEES.

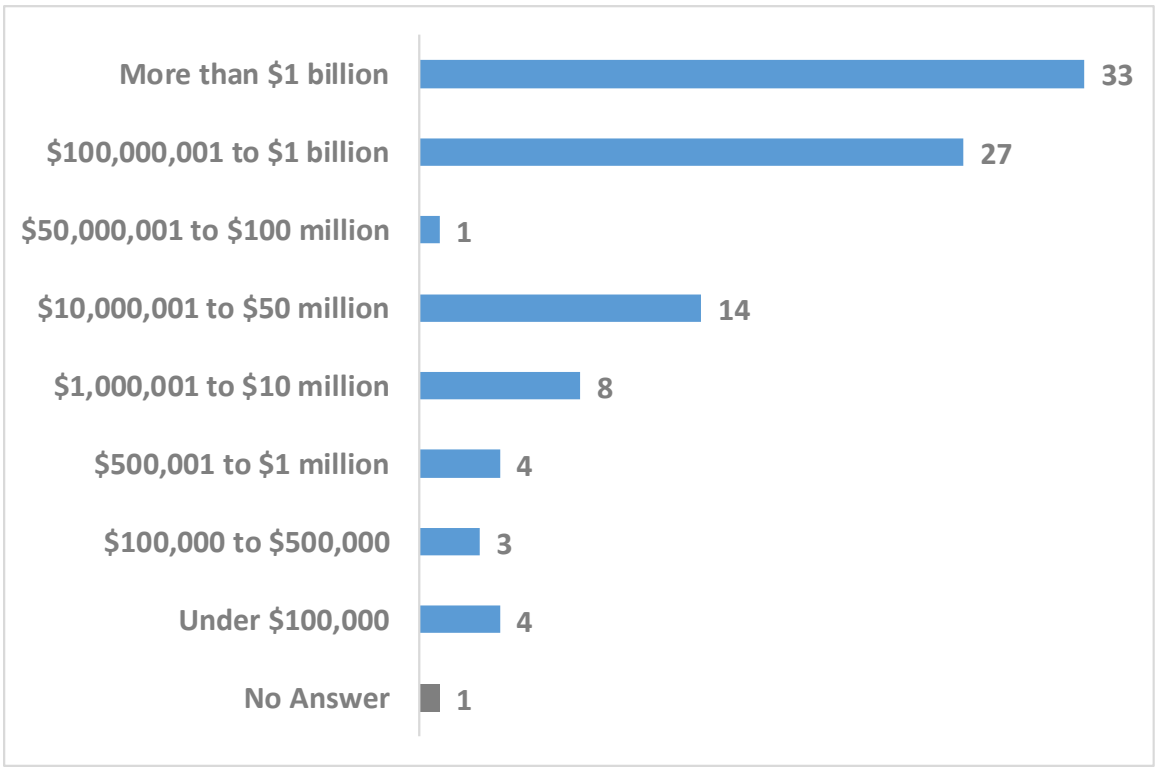

FIGURE 7. SIZE OF FIRMS BASED ON ANNUAL REVENUE.

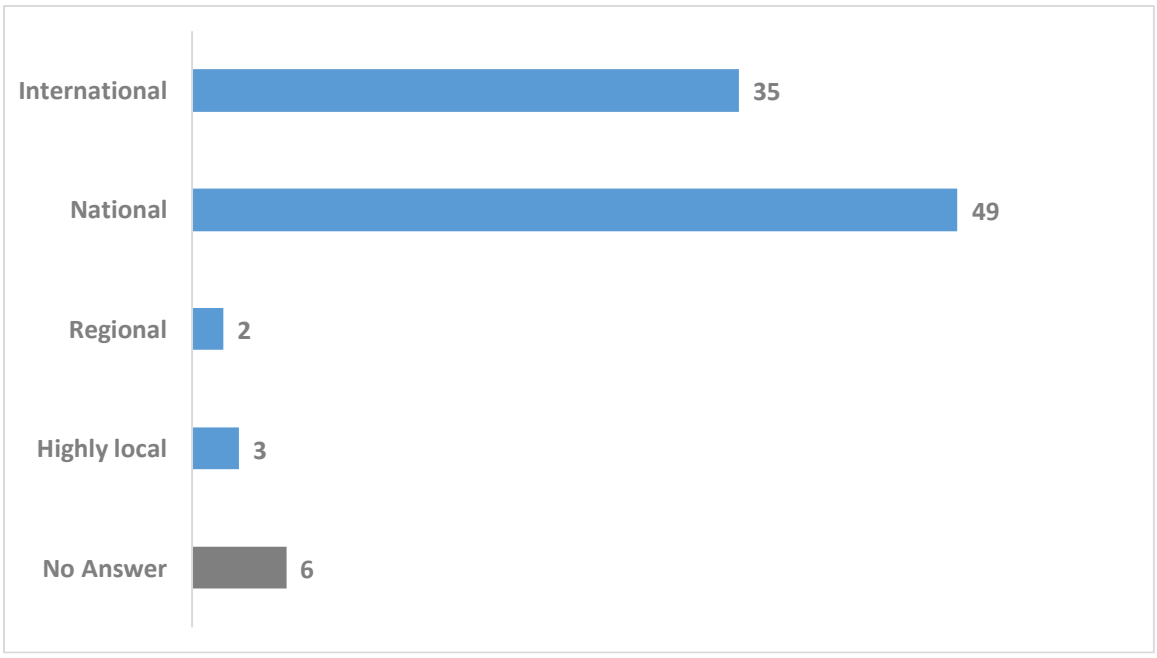

FIGURE 8. GEOGRAPHICAL SCOPE OF THE BUSINESS UNIT.

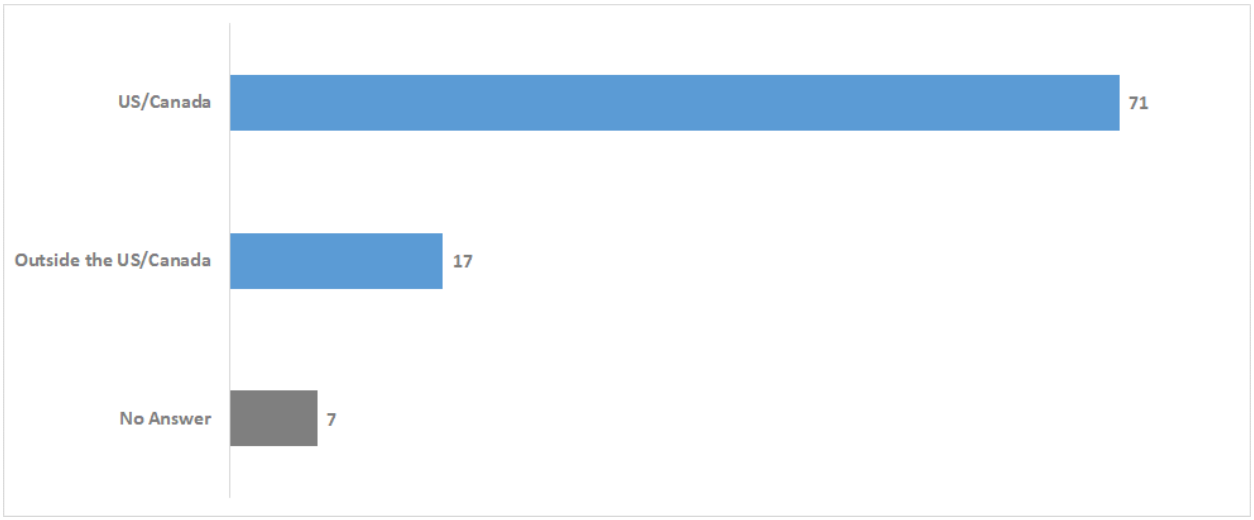

FIGURE 9. LOCATION OF CORPORATE HEADQUARTERS.

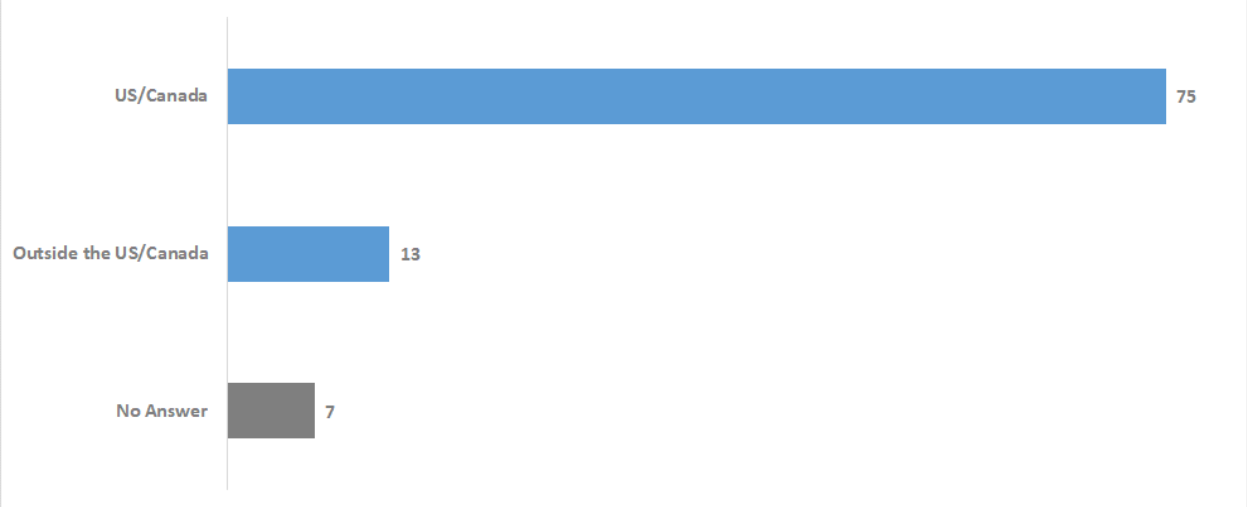

FIGURE 10. LOCATION OF BUSINESS UNIT HEADQUARTERS.

Appendix I. Component Factor Analysis

Independent Variables

Table 4. Strategy Archetype – *Defender* Factor Analysis

		Component			
		F1	F2	F3	F4
SA-D1	In comparison to competitors, the services which we provide to our customers are best characterized as well focused, relatively stable and consistently defined throughout the organization and marketplace.	0.627	0.100	-0.017	0.469
SA-D2	In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which offers fewer, selective services which are high in quality.	-0.035	-0.010	0.047	0.874
SA-D3	The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as minimal. We really don't spend much time monitoring the marketplace.	-0.437	0.490	0.242	0.080
SA-D4	In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of concentrating on more fully developing those markets which we currently serve.	0.049	-0.014	0.665	0.065
SA-D5	One of the most important goals in this organization in comparison to competitors is our dedication and commitment to keep costs under control.	0.638	-0.109	0.233	-0.358
SA-D6	In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as specialized. Their skills are concentrated into one, or a few, specific areas.	-0.029	0.831	0.078	-0.104
SA-D7	The one thing that protects my organization from competitors is that we are able to do a limited number of things exceptionally well.	0.055	0.812	0.049	0.107
SA-D8	More so than many other competitors, our management staff tends to concentrate on maintaining a secure financial position through cost and quality control measures.	0.699	-0.297	0.231	-0.048
SA-D9	In contrast to many other competitors, my organization prepares for the future by identifying those problems which, if solved, will maintain and then improve our current service offerings and market position.	0.752	0.134	-0.206	0.056
SA-D10	In comparison to competitors, the structure of my organization is functional in nature (i.e. organized by department--marketing, accounting, human resources, etc.).	0.420	0.310	0.434	0.148
SA-D11	Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as highly centralized and primarily the responsibility of senior management.	-0.066	0.180	0.787	-0.100

Table 5. Strategy Archetype – *Prospector* Factor Analysis

		Component		
		F1	F2	F3
SA-P1	In comparison to competitors, the services which we provide to our customers are best characterized as more innovative, continually changing, and broader in nature throughout the organization and marketplace.	0.599	0.085	0.617
SA-P2	In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which has a reputation for being innovative and creative.	0.043	0.094	0.897
SA-P3	In contrast to competitors, my organization continuously monitors the marketplace.	0.442	0.438	-0.024
SA-P4	In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of aggressively entering into new markets with new types of service offerings and programs.	0.771	0.034	-0.085
SA-P5	One of the most important goals in this organization in comparison to competitor, is our dedication and commitment to insure that the people, resources and equipment required to develop new services and new markets are available and accessible.	0.262	0.615	0.333
SA-P6	In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as broad and entrepreneurial. Their skills are diverse, flexible, and enable change to be created.	0.262	0.812	0.074
SA-P7	The one thing that protects my organization from competitors is that we are able to consistently develop new services and new markets.	0.689	0.475	0.197
SA-P8	More so than many other competitors, our management staff tends to concentrate on developing new services and expanding into new markets or market segments.	0.800	0.254	0.249
SA-P9	In contrast to many other competitors, my organization prepares for the future by identifying trends and opportunities in the marketplace which can result in the creation of service offering or programs which are new to the industry or which reach new markets.	0.609	0.428	0.329
SA-P10	In comparison to competitors, the structure of my organization is service or market oriented (i.e. organized by customer geography or product line).	0.224	0.590	-0.184
SA-P11	Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as decentralized and participatory, encouraging many organizational members to be involved.	-0.048	0.717	0.292

Table 6. Strategy Archetype – *Analyzer* Factor Analysis

		Component			
		F1	F2	F3	F4
SA-A1	In comparison to competitors, the services which we provide to our customers are best characterized as fairly stable in certain units/departments and markets while innovative in other units/departments and markets.	0.230	0.224	0.087	0.705
SA-A2	In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which adopts new ideas and innovations, but only after careful analysis.	0.430	-0.109	-0.566	0.203
SA-A3	The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as average. We spend a reasonable amount of time monitoring the marketplace.	-0.182	-0.646	0.534	-0.083
SA-A4	In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of assertively penetrating more deeply into markets we currently serve, while adopting new services only after a very careful review of their potential.	0.288	0.026	0.762	0.155
SA-A5	One of the most important goals in this organization in comparison to competitors is our dedication and commitment to analyze our costs and revenues carefully, to keep costs under control, and to selectively generate new services or enter new markets.	0.599	-0.115	0.376	0.271
SA-A6	In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as analytical. Their skills enable them to both identify trends and then develop new service offerings or markets.	0.806	0.051	-0.057	-0.138
SA-A7	The one thing that protects my organization from competitors is that we are able to carefully analyze emerging trends and adopt only those which have proven potential.	0.799	0.144	-0.023	0.119
SA-A8	More so than many other competitors, our management staff tends to concentrate on analyzing opportunities in the marketplace and selecting only those opportunities with proven potential, while protecting a secure financial position.	0.742	-0.089	0.101	0.134
SA-A9	In contrast to many other competitors, my organization prepares for the future by identifying those trends in the industry which competitors have proven possess long-term potential while also solving problems related to our current service offerings and our current customers' needs.	0.727	0.165	-0.040	-0.114
SA-A10	In comparison to competitors, the structure of my organization is primarily functional (departmental) in nature; however, a service or market oriented structure does exist in newer or larger service offering areas.	-0.006	0.903	0.153	-0.055
SA-A11	Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as centralized	0.181	0.220	0.050	-0.761

	in more established service areas and more participatory in newer service areas.				

Table 7. Strategy Archetype – *Reactor* Factor Analysis

		Component		
		F1	F2	F3
SA-R1	In comparison to competitors, the services which we provide to our customers are best characterized as in a state of transition, and largely based on responding to opportunities or threats form the marketplace or environment.	0.108	0.724	0.124
SA-R2	In contrast to competitors, my organization does **NOT** have an image in the marketplace as a firm which reacts to opportunities or threats in the marketplace to maintain or enhance our position.	0.241	-0.113	0.785
SA-R3	The amount of time my organization spends on monitoring changes and trends in the marketplace can best be described as sporadic. We sometimes spend a great deal of time and at other times spend little time monitoring the marketplace.	-0.276	0.651	-0.434
SA-R4	In comparison to competitors, the increase or losses in demand which we have experienced are due most probably to our practice of responding to the pressures of the marketplace by taking few risks.	0.045	0.815	-0.140
SA-R5	One of the most important goals in this organization, in comparison to competitors, is our dedication and commitment to make sure that we guard against critical threats by taking whatever action is necessary.	0.707	0.222	0.171
SA-R6	In contrast to competitors, the competencies (skills) which our managerial employees possess can best be characterized as fluid. Their skills are related to the near term demands of the marketplace.	0.579	0.301	0.256
SA-R7	The one thing that protects my organization from competitors is that we are able to respond to trends even though they may possess only moderate potential as they arise.	0.714	-0.132	-0.034
SA-R8	More so than many other competitors, our management staff tends to concentrate on activities or business functions which most need attention given the opportunities or problems we currently confront.	0.595	0.364	-0.079
SA-R9	In contrast to many other competitors, my organization prepares for the future by identifying the best possible solutions to those problems or challenges which require immediate attention.	0.787	-0.083	0.031
SA-R10	In comparison to competitors, the structure of my organization is continually changing to enable us to meet opportunities and solve problems as they arise.	0.753	-0.111	0.150
SA-R11	Unlike many other competitors, the procedures my organization uses to evaluate our performance are best described as heavily oriented toward those reporting requirements which demand immediate attention.	0.599	-0.012	-0.620

Mediating Variables

Table 8. Supply Chain Design – *Leagile* Factor Analysis

		Component					
		F1	F2	F3	F4	F5	F6
SCD-1	Our primary purpose in dealings with partners is pursuing lowest total cost.	0.012	0.822	0.209	-0.136	-0.008	0.074
SCD-2	Our primary purpose in dealings with partners is pursuing quickest response to customers' demand.	0.309	0.309	0.515	-0.351	0.030	0.031
SCD-3	Our manufacturing focus/inventory strategy in dealings with partners is maintaining high average utilization rate.	0.234	0.119	0.664	0.097	0.126	0.269
SCD-4	Our manufacturing focus/inventory strategy in dealings with partners is generating high turns and minimizing inventory throughout the chain.	0.346	0.258	-0.059	-0.176	-0.505	0.534
SCD-5	Our manufacturing focus/inventory strategy in dealings with partners is developing the use of excess buffer production capacity.	0.212	-0.204	0.348	0.251	0.703	0.186
SCD-6	Our manufacturing focus/inventory strategy in dealings with partners is developing significant buffer stocks of parts or finished goods.	0.239	0.203	-0.031	-0.130	0.846	-0.037
SCD-7	Our lead-time focus in dealings with partners is shortening delivery lead-time as long as it does not increase cost.	-0.148	0.028	0.213	0.122	0.038	0.757
SCD-8	Our lead-time focus in dealings with partners is investing aggressively in ways to reduce delivery lead-time irrespective of cost.	0.586	-0.069	-0.242	0.155	0.360	0.455
SCD-9	Our product design strategy is focused on producing low cost product.	0.295	0.596	0.057	0.233	-0.093	-0.344
SCD-10	Our product-design strategy is using modular design.	0.243	0.069	0.102	0.755	-0.127	0.148
SCD-11	Our product-design strategy is to postpone product differentiation for as long as possible.	0.069	0.084	-0.012	0.859	0.178	-0.031
SCD-12	Our approach to choosing suppliers is primarily based on their cost.	-0.101	0.819	-0.104	0.190	0.070	0.132
SCD-13	Our approach to choosing suppliers is primarily based on their quality.	0.209	-0.047	0.802	0.058	0.016	-0.013
SCD-14	Our approach to choosing suppliers is primarily based on their delivery speed.	0.626	0.108	0.331	0.247	0.173	-0.144
SCD-15	Our approach to choosing suppliers is primarily based on their product flexibility.	0.815	-0.072	0.234	0.064	0.142	-0.050
SCD-16	Our approach to choosing suppliers is primarily based on their volume flexibility.	0.735	0.087	0.346	0.144	0.002	-0.164
SCD-17	Our approach to choosing suppliers is primarily based on their process flexibility.	0.901	0.047	0.128	0.016	0.066	0.125

Table 9. Supply Chain Design – *Agile* Factor Analysis

		Component		
		F1	F2	F3
SCD-2	Our primary purpose in dealings with partners is pursuing quickest response to customers' demand.	0.582	-0.017	-0.327
SCD-5	Our manufacturing focus/inventory strategy in dealings with partners is developing the use of excess buffer production capacity.	0.148	0.800	0.189
SCD-6	Our manufacturing focus/inventory strategy in dealings with partners is developing significant buffer stocks of parts or finished goods.	0.140	0.810	-0.190
SCD-8	Our lead-time focus in dealings with partners is investing aggressively in ways to reduce delivery lead-time irrespective of cost.	0.246	0.623	0.251
SCD-10	Our product-design strategy is using modular design.	0.262	-0.066	0.818
SCD-11	Our product-design strategy is to postpone product differentiation for as long as possible.	-0.026	0.239	0.833
SCD-14	Our approach to choosing suppliers is primarily based on their delivery speed.	0.708	0.237	0.221
SCD-15	Our approach to choosing suppliers is primarily based on their product flexibility.	0.790	0.302	0.098
SCD-16	Our approach to choosing suppliers is primarily based on their volume flexibility.	0.824	0.080	0.168
SCD-17	Our approach to choosing suppliers is primarily based on their process flexibility.	0.854	0.239	0.108

Table 10. Supply Chain Design – *Lean* Factor Analysis

		Component		
		F1	F2	F3
SCD-1	Our primary purpose in dealings with partners is pursuing lowest total cost.	0.770	0.159	0.169
SCD-3	Our manufacturing focus/inventory strategy in dealings with partners is maintaining high average utilization rate.	0.136	0.790	0.143
SCD-4	Our manufacturing focus/inventory strategy in dealings with partners is generating high turns and minimizing inventory throughout the chain.	0.309	0.065	0.497
SCD-7	Our lead-time focus in dealings with partners is shortening delivery lead-time as long as it does not increase cost.	-0.076	0.123	0.878
SCD-9	Our product design strategy is focused on producing low cost product.	0.732	0.207	-0.337
SCD-12	Our approach to choosing suppliers is primarily based on their cost.	0.781	-0.186	0.258
SCD-13	Our approach to choosing suppliers is primarily based on their quality.	-0.014	0.851	0.027

Dependent Variables

Table 11. Firm Performance – *Market Share Gains* Factor Analysis

		Component
		F1
FP-P1	Market share growth relative to competition effectiveness	0.850
FP-P2	Acquiring new customers	0.818
FP-P3	Increasing sales to current customers	0.801
FP-P4	Growth in sales revenue	0.894

Table 12. Firm Performance – Profitability Factor Analysis

		Component
		F1
FP-P5	Business unit profitability	0.934
FP-P6	Return on investment (ROI)	0.922
FP-P7	Return on sales (ROS)	0.927
FP-P8	Reaching financial goals	0.915

Table 13. Firm Performance – *Performance* Factor Analysis

		Component
		F1
FP-P1	Market share growth relative to competition effectiveness	0.776
FP-P2	Acquiring new customers	0.746
FP-P3	Increasing sales to current customers	0.782
FP-P4	Growth in sales revenue	0.810
FP-P5	Business unit profitability	0.891
FP-P6	Return on investment (ROI)	0.840
FP-P7	Return on sales (ROS)	0.872
FP-P8	Reaching financial goals	0.870

Table 14. Supply Chain Outcomes – *Reliability* Factor Analysis

		Component
		F1
SCO-RL1	Orders of our products are received by the customer in the quantities committed.	0.759
SCO-RL2	Orders of our products are **NOT** fulfilled on the customer's originally committed date.	0.772
SCO-RL3	Orders of our products are delivered to the customer on-time and with accurate documentation supporting the order, including packing slips, bills of lading, invoices, etc.	0.774
SCO-RL4	Orders of our products are delivered to the customer in an undamaged state that meet specifications, have the correct configuration, are faultlessly installed (as applicable), and accepted by the customer.	0.784

Table 15. Supply Chain Outcomes – *Responsiveness* Factor Analysis

		Component
		F1
SCO-RS1	The average time required to source materials is long compared to competitors. (Sourcing includes the time to identify, select, and negotiate with suppliers, scheduling delivery and receiving product, and then authorizing payment to the supplier.)	0.867
SCO-RS2	The average time required to produce product is long compared to competitors. (Production time includes all time for engineering development, scheduling of production time, issuing material to production orders, the manufacturing process, packaging, staging finished goods, and releasing product for shipment or storage.)	0.837
SCO-RS3	The average time required to deliver product is long compared to competitors. (Delivery time includes all time required to build loads, route shipments, select carriers and rates, receive product from manufacturing, pick the order, pack the order, load the vehicle, and ship the product.)	0.915
SCO-RS1	The average time required to source materials is long compared to competitors. (Sourcing includes the time to identify, select, and negotiate with suppliers, scheduling delivery and receiving product, and then authorizing payment to the supplier.)	0.370

Table 16. Supply Chain Outcomes – *Agility* Factor Analysis

		Component	
		F1	F2
SCO-AG1	We can significantly increase volumes of raw materials acquired and received within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.803	0.256
SCO-AG2	We can significantly increase production volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.759	0.360
SCO-AG3	We can significantly increase delivery volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.855	0.266
SCO-AG4	We can **NOT** significantly increase volumes of raw materials returned to suppliers within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.711	0.094
SCO-AG5	We can significantly manage an increase in volumes of finished goods returned by customers within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.496	0.024
SCO-AG6	We can significantly decrease volumes of raw materials acquired and received within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.341	0.748

SCO-AG7	We can significantly decrease production volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.119	0.907
SCO-AG8	We can significantly decrease delivery volumes within the next 30 days given current requirements related to demand, staffing, capital, materials, and cycle time.	0.137	0.881

Table 17. Supply Chain Outcomes – *Costs* Factor Analysis

		Component	
		F1	F2
SCO-CO1	The costs associated with planning our products are high compared to competitors.	0.319	-0.796
SCO-CO2	The costs associated with sourcing our products are low compared to competitors.	0.875	-0.079
SCO-CO3	The costs associated with manufacturing our products are low compared to competitors.	0.844	-0.066
SCO-CO4	The average costs associated with delivering our products is low compared to competitors.	0.868	-0.010
SCO-CO5	The average costs associated with returns of our products and sourced materials are low compared to competitors.	0.503	0.589
SCO-CO6	The average direct labor costs spent on production are low compared to competitors.	0.761	0.279
SCO-CO7	The average costs of material sourced from suppliers are low compared to competitors.	0.757	-0.118
SCO-CO8	The average indirect spend for materials and services is low compared to competitors.	0.709	0.417

Table 18. Supply Chain Outcomes – *Asset Management Efficiency* Factor Analysis

		Component	
		F1	F2
SCO-AME1	The length of time (in days) from when a sale is made until cash for it is received from customers is high compared to competitors.	-0.748	-0.003
SCO-AME2	The amount of inventory as expressed in terms of days of sales is low compared to competitors.	0.041	0.976
SCO-AME3	The length of time (in days) from purchasing materials, labor, and/or conversion resources until cash payments must be made is high relative to competitors.	0.791	-0.131
SCO-AME4	Operating revenue generated from supply chain activities is high compared to competitors.	0.680	0.231
SCO-AME5	The costs associated with planning, sourcing, manufacturing, delivering, and returns is high compared to competitors.	-0.635	-0.078

Control Variables

Table 19. *Environment* Factor Analysis

		Component				
		F1	F2	F3	F4	F5
E1	It is difficult to predict how customers' needs and requirements will evolve in our markets.	0.162	0.737	-0.112	-0.089	0.092
E2	It is difficult to forecast competitive actions.	-0.135	0.757	0.150	0.154	-0.180
E3	Generally, it is difficult to understand how the market will change.	0.101	0.843	0.028	-0.029	0.122
E4	There is a great deal of uncertainty in our markets.	0.108	0.767	0.293	0.098	0.142
E5	The technology in our industry is changing rapidly.	0.723	0.127	-0.121	-0.058	0.219
E6	Technological changes provide big opportunities in our industry.	0.827	-0.023	0.073	-0.156	-0.072
E7	A large number of new product ideas have been made possible through technological breakthroughs in our industry.	0.776	0.079	0.166	-0.038	-0.258
E8	Technological developments in our industry are rather minor.	0.842	0.071	-0.060	0.112	0.008
E9	Competition in our markets is cut-throat.	-0.110	0.102	0.769	0.272	0.215
E10	Anything that one competitor can offer, others can match readily.	-0.081	0.082	0.848	0.022	0.020
E11	One hears of some new competitive move almost every day.	0.194	0.059	0.703	-0.071	0.054
E12	Our competitors are relatively weak.	0.241	-0.177	0.216	0.308	0.491
E13	The markets for our business-unit are growing strongly.	-0.048	-0.023	-0.033	0.876	-0.039
E14	The profit margins for our business unit are growing rapidly.	-0.061	0.041	0.137	0.536	0.594
E15	Our business unit is unable to capture the returns on its value-added components.	-0.156	0.243	0.079	-0.075	0.752
E16	Our business unit's core customer group is expanding.	-0.044	0.095	0.098	0.745	0.124

Appendix J. Correlation Table

Table 20. Correlation Table

	Key Variable	Avg	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	Environment - Business Unit	8.375	4.543	*.710*																													
2	Competition - Business Unit	16.500	7.979	.550**	*.736*																												
3	Growth - Business Unit	6.667	4.487	-.181	.215*	*.660*																											
4	Uncertainty - Business Unit	8.500	4.445	.643**	.193	.099	*.809*																										
5	Technology - Business Unit	10.000	5.348	.530**	-.031	-.103	.262*	*.809*																									
6	Operating Experience -	100.000	33.643	-.205	-.141	.051	-.213	-.045	---																								
7	Scope - Business Unit	4.000	3.303	.066	-.157	.085	.121	.171	.203	---																							
8	Defender - Cost Focus	7.000	5.120	.187	.158	.220*	.078	.245*	.112	.080	*.682*																						
9	Defender - Narrow Focus	6.333	3.755	.079	-.102	-.226*	.038	-.044	.066	-.055	-.142	*.646*																					
10	Prospector	6.455	4.524	.248*	-.031	-.279*	-.002	.222*	-.091	.105	.307**	-	*.854*																				
11	Prospector - New Markets	6.750	4.223	.176	-.114	-	-.051	.163	-.060	.181	.212*	-.152	.890*	*.774*																			
12	Prospector - Resources	6.750	4.672	.276**	.102	-	.049	.221*	-.090	-.089	.264*	-.243*	.829*	.586**	*.714*																		
13	Analyzer	6.833	4.697	.218*	.265**	.107	.120	.167	-.033	.093	.619**	-	.610*	.476**	.549**	*.775*																	
14	Reactor	6.714	4.519	.443**	.367**	-.022	.308**	.232*	-.152	.008	.296**	-.141	.422*	.359**	.486**	.581**	*.797*																
15	Lean	6.667	4.255	.178	.240*	.097	.155	.064	-.132	.159	.127	.030	-.135	-.115	-.145	.115	.010	*.664*															
16	Agile	6.100	4.064	.248*	.143	-.239*	.048	.123	-.038	-.139	.036	-.040	.377*	.438**	.322**	.324**	.295*	.185	*.800*														
17	Agile - Speed & Flexibility	7.000	4.394	.214*	.210*	-.131	.054	.039	-.114	-.216*	.104	-.051	.400*	.414**	.382**	.387**	.330*	.207*	.872**	*.833*													
18	Leagile	6.118	4.322	.306**	.249*	-.133	.129	.140	-.089	-.086	.138	-.040	.277*	.337**	.212*	.363**	.274*	.511**	.899**	.818**	*.785*												
19	Performance - Business Unit	7.000	5.137	.172	-.009	-	.031	.160	-.252*	-.064	.265*	-.216*	.495*	.401**	.433**	.470**	.235*	-.187	.234*	.184	.110	*.931*											
20	Profitability - Business Unit	7.000	5.169	.139	-.076	-	.008	.185	-.224	-.025	.251*	-.168	.494*	.409**	.448**	.410**	.128	-.227*	.202	.165	.073	.922*	*.941*										
21	Market Share Gains - Business	7.000	5.106	.179	.059	-.198	.049	.109	-.253*	-.090	.237*	-.224*	.414*	.325**	.352**	.445**	.305*	-.119	.230*	.174	.128	.922*	.702**	*.862*									
22	Reliability	7.000	5.659	.051	.067	.082	.132	-.055	-.006	.071	.196	-.268*	.278*	.236*	.271*	.269*	.194	.165	.239*	.284**	.360*	.045	.027	.056	*.771*								
23	Responsiveness	7.000	4.989	-.039	-.065	.327**	.003	.080	-.075	.103	.274**	-	.355*	.346**	.191	.314**	.214	.001	-.018	.079	.026	.111	.123	.078	.363**	*.769*							
24	Agility	6.500	4.346	.157	.104	.065	.160	.075	-.094	-.049	.058	-	.266*	.300**	.221*	.333**	.217	.119	.337**	.339**	.334*	.093	.109	.064	.313**	.355*	*.846*						
25	Agility - Downside	7.000	4.451	.192	.133	.091	.164	-.029	-.022	-.040	.062	-.144	.151	.166	.074	.180	.059	.173	.245*	.286**	.270*	-.022	-.001	-.038	.220*	.182	.785**	*.848*					
26	Agility - Upside	6.800	4.290	.118	.084	.034	.128	.107	-.111	-.005	.057	-	.278*	.323**	.262*	.371**	.280*	.071	.320**	.308**	.308*	.146	.160	.110	.298**	.370*	.922**	.482*	*.815*				
27	Costs	6.250	4.157	.139	.046	-.105	-.061	.197	-.079	.122	.064	-.047	.247*	.346**	.210	.255*	.181	.113	.261*	.219*	.228*	.168	.158	.150	.151	.028	.403**	.318*	.385*	*.860*			
28	Costs - Cost of Goods Sold	7.000	4.124	.195	.017	-.054	-.027	.265*	-.142	.034	.136	-.045	.223*	.300**	.164	.246*	.093	.129	.279*	.225*	.260*	.200	.171	.194	.077	-.036	.391**	.337*	.359*	.886*	*.794*		
29	Costs - Total Supply Chain	6.400	4.156	.116	.085	-.127	-.068	.140	-.031	.137	.021	-.058	.207	.292**	.196	.238*	.227*	.137	.221*	.195	.199	.122	.122	.103	.151	.042	.347**	.258*	.340*	.948*	.694*	*.776*	
30	Asset Management Efficiency	6.500	3.892	.080	.003	-.230*	.032	.088	-.111	.141	.066	.145	-.059	-.086	.065	.050	.169	.058	-.125	-.017	-.103	.013	.030	-.005	-.211*	-	-.235*	-	-.138	.022	.024	.019	*.563*

Note. *. Correlation is significant at the 0.05 level (2-tailed);

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix K. Full Regression Results for Hypotheses

Hypothesis 1

Table 21. Linear Regression Results for Hypothesis H_{1A}

Hypothesis H_{1A}:		The more a firm follows a *Defender* strategy, the more likely the firm will adopt a *Lean* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Defender - Cost Focus	Lean	*-None-*	F(1,89) = 1.452, p > .10	3.434	.164	.231	.127	.016	No
		Environment - Business Unit	F(2,87) = 2.083, p > .10	2.450	.122	.381	.127	.046	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 1.214, p > .10	3.007	.153	.278	.127	.040	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 2.475, p > .10	2.928	.089	.529	.123	.084	No
		Operating Experience - Business Unit	F(2,65) = 1.117, p > .10	4.001	.094	.568	.051	.033	No
		Scope - Business Unit	F(2,82) = 2.028, p > .10	2.472	.211	.141	.172	.047	No
Defender - Narrow Focus	Lean	*-None-*	F(1,91) = 0.082, p > .10	4.136	.031	.776	.030	.001	No
		Environment - Business Unit	F(2,89) = 1.473, p > .10	3.096	.018	.871	.031	.032	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 0.672, p > .10	3.627	.011	.924	.012	.022	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 2.562, p > .10	2.818	.098	.380	.033	.087	No
		Operating Experience - Business Unit	F(2,65) = 0.553, p > .10	4.266	.030	.822	.019	.017	No
		Scope - Business Unit	F(2,84) = 1.125, p > .10	3.290	.014	.902	.006	.026	No

Table 22. Linear Regression Results for Hypothesis H_{1B}

Hypothesis	H_{1B}:	The more a firm follows a *Defender* strategy, the less likely the firm will adopt an *Agile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Defender - Cost Focus	Agile	*-None-*	F(1,88) = 0.116, p > .10	3.898	.033	.734	.036	.001	No
		Environment - Business Unit	F(2,86) = 2.599, p > .10	2.980	-.012	.899	.033	.057	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 0.491, p > .10	3.759	.000	.997	.036	.017	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 3.090, p > .10	4.167	.114	.258	.093	.104	No
		Operating Experience - Business Unit	F(2,64) = 0.027, p > .10	4.144	-.009	.937	-.012	.001	No
		Scope - Business Unit	F(2,81) = 0.901, p > .10	4.190	.074	.456	.069	.022	No
Defender - Cost Focus	Agile - Speed & Flexibility	*-None-*	F(1,89) = 0.982, p > .10	3.790	.119	.324	.104	.011	No
		Environment - Business Unit	F(2,87) = 2.136, p > .10	2.861	.075	.541	.103	.047	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 0.375, p > .10	3.680	.117	.358	.104	.013	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 2.387, p > .10	3.832	.184	.142	.154	.081	No
		Operating Experience - Business Unit	F(2,65) = 0.757, p > .10	4.014	.107	.470	.077	.023	No
		Scope - Business Unit	F(2,82) = 3.250, p > .10	4.567	.178	.137	.137	.073	No
Defender - Narrow Focus	Agile	*-None-*	F(1,89) = 0.140, p > .10	4.177	-.028	.709	-.040	.002	No
		Environment - Business Unit	F(2,87) = 2.942, p > .10	2.975	-.024	.753	-.035	.063	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 0.499, p > .10	3.838	-.023	.761	-.040	.017	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 2.586, p > .10	4.703	-.015	.853	.003	.088	No
		Operating Experience - Business Unit	F(2,64) = 0.120, p > .10	4.060	.023	.806	.026	.004	No

		Scope - Business Unit	F(2,82) = 1.176, p > .10	4.877	-.061	.442	-.073	.028	No
Defender - Narrow Focus	Agile - Speed & Flexibility	*-None-*	F(1,91) = 0.238, p > .10	4.574	-.045	.627	-.051	.003	No
		Environment - Business Unit	F(2,89) = 2.393, p > .10	3.465	-.059	.523	-.049	.051	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 0.243, p > .10	4.411	-.061	.524	-.068	.008	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 1.576, p > .10	4.676	-.025	.805	-.030	.055	No
		Operating Experience - Business Unit	F(2,65) = 0.694, p > .10	4.423	.044	.696	.037	.021	No
		Scope - Business Unit	F(2,84) = 2.791, p > .10	5.822	-.096	.303	-.095	.062	No

Table 23. Linear Regression Results for Hypothesis H_{1C}

Hypothesis H_{1C}:		The more a firm follows a *Defender* strategy, the less likely the firm will adopt a *Leagile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Defender - Cost Focus	Leagile	*-None-*	F(1,86) = 1.673, p > .10	3.788	.104	.199	.138	.019	No
		Environment - Business Unit	F(2,84) = 4.790, p > .10	2.842	.063	.431	.136	.102	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 1.167, p > .10	3.533	.085	.317	.138	.040	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 3.785, p > .10	3.801	.138	.102	.183	.127	No
		Operating Experience - Business Unit	F(2,62) = 0.321, p > .10	4.203	.038	.704	.042	.010	No
		Scope - Business Unit	F(2,79) = 1.995, p < .10	3.858	.150	.066	.196	.048	No
Defender - Narrow Focus	Leagile	*-None-*	F(1,87) = 0.140, p > .10	4.408	-.023	.709	-.040	.002	No
		Environment - Business Unit	F(2,85) = 4.470, p > .10	3.207	-.021	.728	-.037	.095	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 0.872, p > .10	3.997	-.022	.725	-.040	.030	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 2.809, p > .10	4.378	.004	.951	-.005	.098	No
		Operating Experience - Business Unit	F(2,62) = 0.314, p > .10	4.308	.026	.736	.034	.010	No
		Scope - Business Unit	F(2,80) = 0.741, p > .10	4.830	-.060	.351	-.097	.018	No

Hypothesis 2

Table 24. Linear Regression Results for Hypothesis H_{2A}

Hypothesis H_{2A}:		The more a firm follows a *Prospector* strategy, the less likely the firm will adopt a *Lean* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Prospector	Lean	*-None-*	F(1,87) = 1.617, p > .10	5.015	-.164	.207	-.135	.018	No
		Environment - Business Unit	F(2,85) = 3.121, p < .10	3.901	-.234	.078	-.136	.068	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 1.456, p > .10	4.453	-.201	.133	-.149	.049	No
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 2.423, p > .10	3.695	-.068	.616	-.078	.086	No
		Operating Experience - Business Unit	F(2,61) = 1.812, p > .10	5.426	-.214	.142	-.172	.056	No
		Scope - Business Unit	F(2,80) = 2.794, p < .10	4.218	-.234	.084	-.163	.065	Yes
Prospector - New Markets	Lean	*-None-*	F(1,91) = 1.217, p > .10	4.709	-.107	.273	-.115	.013	No
		Environment - Business Unit	F(2,89) = 2.506, p > .10	3.585	-.141	.153	-.115	.053	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 1.193, p > .10	4.154	-.124	.217	-.132	.039	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 2.293, p > .10	3.278	.000	1.000	-.052	.078	No
		Operating Experience - Business Unit	F(2,65) = 1.467, p > .10	4.988	-.139	.199	-.150	.043	No
		Scope - Business Unit	F(2,84) = 2.875, p < .10	3.945	-.195	.064	-.159	.064	Yes
Prospector - Resources	Lean	*-None-*	F(1,90) = 1.933, p > .10	4.975	-.153	.168	-.145	.021	No
		Environment - Business Unit	F(2,88) = 3.556, p < .10	3.817	-.223	.050	-.145	.075	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 1.656, p < .10	4.422	-.191	.093	-.160	.054	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 3.031, p > .10	4.224	-.155	.172	-.128	.102	No
		Operating Experience - Business Unit	F(2,64) = 1.957, p > .10	5.423	-.215	.105	-.188	.058	No
		Scope - Business Unit	F(2,83) = 1.745, p > .10	4.061	-.135	.239	-.136	.040	No

Table 25. Linear Regression Results for Hypothesis H_{2B}

Hypothesis H_{2B}:		The more a firm follows a *Prospector* strategy, the more likely the firm will adopt an *Agile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Prospector	Agile	*-None-*	F(1,85) = 14.052, p < .001	2.629	.316	.000	.377	.142	Yes
		Environment - Business Unit	F(2,83) = 8.594, p < .01	1.913	.282	.001	.375	.172	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,83) = 4.709, p < .001	2.472	.311	.001	.377	.145	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,76) = 6.482, p < .01	3.034	.295	.002	.385	.204	Yes
		Operating Experience - Business Unit	F(2,60) = 5.081, p < .01	2.722	.299	.002	.381	.145	Yes
		Scope - Business Unit	F(2,78) = 8.087, p < .001	3.340	.321	.000	.368	.172	Yes
Prospector	Agile - Speed & Flexibility	*-None-*	F(1,87) = 16.531, p < .001	2.528	.412	.000	.400	.160	Yes
		Environment - Business Unit	F(2,85) = 8.909, p < .001	2.018	.381	.000	.399	.173	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 5.381, p < .001	2.490	.424	.000	.393	.161	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 6.514, p < .001	2.399	.411	.000	.402	.202	Yes
		Operating Experience - Business Unit	F(2,61) = 5.298, p < .01	2.894	.359	.003	.375	.148	Yes
		Scope - Business Unit	F(2,80) = 12.441, p < .001	3.721	.429	.000	.402	.237	Yes
Prospector - New Markets	Agile	*-None-*	F(1,89) = 21.113, p < .001	2.872	.286	.000	.438	.192	Yes
		Environment - Business Unit	F(2,87) = 13.048, p < .001	1.965	.270	.000	.437	.231	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 7.187, p < .001	2.633	.283	.000	.438	.199	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 9.661, p < .001	3.013	.289	.000	.446	.266	Yes
		Operating Experience - Business Unit	F(2,64) = 10.145, p < .001	2.877	.296	.000	.490	.241	Yes
		Scope - Business Unit	F(2,82) = 11.691, p < .001	3.689	.299	.000	.414	.222	Yes
Prospector - New Markets	Agile - Speed & Flexibility	*-None-*	F(1,91) = 18.802, p < .001	3.011	.330	.000	.414	.171	Yes
		Environment - Business Unit	F(2,89) = 10.420, p < .001	2.348	.310	.000	.413	.190	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 6.076, p < .001	2.898	.336	.000	.407	.172	Yes

		Competition - Business Unit, Growth - Business Unit	F(3,81) = 8.238, p < .001	2.597	.357	.000	.421	.234	Yes
		Operating Experience - Business Unit	F(2,65) = 8.597, p < .001	3.158	.331	.000	.446	.209	Yes
		Scope - Business Unit	F(2,84) = 12.981, p < .001	4.296	.346	.000	.389	.236	Yes
Prospector - Resources	Agile	*-None-*	F(1,88) = 10.193, p < .01	2.967	.237	.002	.322	.104	Yes
		Environment - Business Unit	F(2,86) = 6.789, p < .01	2.228	.202	.009	.321	.136	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 3.532, p < .01	2.801	.226	.004	.322	.110	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 4.778, p < .05	3.598	.190	.019	.326	.154	Yes
		Operating Experience - Business Unit	F(2,63) = 2.979, p < .05	3.106	.214	.019	.293	.086	Yes
		Scope - Business Unit	F(2,81) = 6.515, p < .01	3.331	.248	.001	.357	.139	Yes
Prospector - Resources	Agile - Speed & Flexibility	*-None-*	F(1,90) = 15.371, p < .001	2.795	.344	.000	.382	.146	Yes
		Environment - Business Unit	F(2,88) = 8.399, p < .001	2.273	.313	.001	.382	.160	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 4.858, p < .001	2.765	.345	.000	.375	.143	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 5.066, p < .01	2.960	.296	.003	.365	.160	Yes
		Operating Experience - Business Unit	F(2,64) = 4.254, p < .01	3.149	.294	.008	.329	.117	Yes
		Scope - Business Unit	F(2,83) = 11.967, p < .001	3.507	.365	.000	.440	.224	Yes

Table 26. Linear Regression Results for Hypothesis H_{2C}

Hypothesis H_{2C}:		The more a firm follows a *Prospector* strategy, the less likely the firm will adopt a *Leagile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Prospector	Leagile	*-None-*	F(1,85) = 7.090, p < .01	3.467	.188	.009	.277	.077	No
		Environment - Business Unit	F(2,83) = 6.847, p < .05	2.623	.150	.037	.276	.142	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,83) = 2.923, p < .05	3.176	.182	.014	.277	.096	No
		Competition - Business Unit, Growth - Business Unit	F(3,76) = 5.372, p < .01	3.264	.203	.010	.301	.175	No
		Operating Experience - Business Unit	F(2,60) = 2.325, p < .05	3.625	.165	.043	.262	.072	No
		Scope - Business Unit	F(2,78) = 3.718, p < .05	3.866	.184	.011	.268	.087	No
Prospector - New Markets	Leagile	*-None-*	F(1,88) = 11.301, p < .01	3.581	.178	.001	.337	.114	No
		Environment - Business Unit	F(2,86) = 9.807, p < .01	2.596	.161	.003	.336	.186	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 4.579, p < .01	3.222	.177	.001	.337	.138	No
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 8.125, p < .001	3.163	.214	.000	.364	.236	No
		Operating Experience - Business Unit	F(2,63) = 5.292, p < .01	3.637	.181	.002	.372	.144	No
		Scope - Business Unit	F(2,81) = 5.204, p < .01	4.066	.172	.003	.303	.114	No
Prospector - Resources	Leagile	*-None-*	F(1,87) = 4.099, p < .05	3.739	.126	.046	.212	.045	No
		Environment - Business Unit	F(2,85) = 5.673, p > .10	2.835	.086	.171	.211	.118	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 2.019, p < .10	3.434	.114	.077	.212	.067	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 3.629, p > .10	3.843	.098	.148	.221	.122	No
		Operating Experience - Business Unit	F(2,62) = 1.108, p > .10	3.942	.097	.201	.168	.035	No
		Scope - Business Unit	F(2,80) = 3.109, p < .05	3.853	.144	.021	.261	.072	No

Hypothesis 3

Table 27. Linear Regression Results for Hypothesis H_{3A}

Hypothesis H_{3A}:		The more a firm follows an *Analyzer* strategy, the less likely the firm will adopt a *Lean* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Analyzer	Lean	*-None-*	F(1,91) = 1.229, p > .10	3.615	.138	.271	.115	.013	No
		Environment - Business Unit	F(2,89) = 1.763, p > .10	2.822	.095	.456	.115	.038	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 0.921, p > .10	3.223	.113	.375	.113	.030	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 2.416, p > .10	3.159	.044	.725	.113	.082	No
		Operating Experience - Business Unit	F(2,65) = 0.933, p > .10	3.835	.119	.400	.108	.028	No
		Scope - Business Unit	F(2,84) = 1.732, p > .10	2.747	.147	.253	.136	.040	No

Table 28. Linear Regression Results for Hypothesis H_{3B}

Hypothesis H_{3B}:		The more a firm follows an *Analyzer* strategy, the less likely the firm will adopt an *Agile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Analyzer	Agile	*-None-*	F(1,89) = 10.431, p < .01	2.808	.266	.002	.324	.105	No
		Environment - Business Unit	F(2,87) = 6.835, p < .01	2.111	.230	.007	.324	.136	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 3.546, p < .01	2.701	.256	.003	.324	.109	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 6.953, p < .001	3.547	.286	.001	.354	.207	No
		Operating Experience - Business Unit	F(2,64) = 4.786, p < .01	2.793	.280	.003	.360	.130	No
		Scope - Business Unit	F(2,82) = 7.934, p < .001	3.274	.303	.000	.366	.162	No
Analyzer	Agile - Speed & Flexibility	*-None-*	F(1,91) = 16.063, p < .001	2.524	.397	.000	.387	.150	No
		Environment - Business Unit	F(2,89) = 8.940, p < .001	1.952	.366	.001	.387	.167	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,88) = 5.192, p < .001	2.561	.399	.000	.386	.150	No
		Competition - Business Unit, Growth - Business Unit	F(3,81) = 6.581, p < .001	3.154	.384	.000	.395	.196	No
		Operating Experience - Business Unit	F(2,65) = 6.563, p < .001	2.715	.389	.001	.398	.168	No
		Scope - Business Unit	F(2,84) = 14.883, p < .001	3.427	.459	.000	.440	.262	No

Table 29. Linear Regression Results for Hypothesis H_{3C}

Hypothesis H_{3C}:		The more a firm follows an *Analyzer* strategy, the more likely the firm will adopt a *Leagile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Analyzer	Leagile	*-None-*	F(1,88) = 13.320, p < .001	3.186	.241	.000	.363	.131	Yes
		Environment - Business Unit	F(2,86) = 9.722, p < .01	2.433	.205	.003	.362	.184	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 4.779, p < .01	2.981	.229	.001	.363	.143	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 7.013, p < .01	3.492	.232	.001	.382	.210	Yes
		Operating Experience - Business Unit	F(2,63) = 4.905, p < .01	3.324	.227	.003	.360	.135	Yes
		Scope - Business Unit	F(2,81) = 10.030, p < .001	3.384	.277	.000	.429	.198	Yes

Hypothesis 4

Table 30. Linear Regression Results for Hypothesis H_{4A}

Hypothesis H_{4A}:		There will be no significant relationship between a firm-level *Reactor* strategy and adoption of a *Lean* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Reactor	Lean	*-None-*	F(1,85) = 0.009, p > .10	4.200	.013	.925	.010	.000	Yes
		Environment - Business Unit	F(2,83) = 1.610, p > .10	3.450	-.110	.483	.011	.037	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,82) = 0.687, p > .10	3.956	-.075	.622	-.004	.025	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,75) = 2.223, p > .10	3.795	-.111	.456	.021	.082	Yes
		Operating Experience - Business Unit	F(2,83) = 1.610, p > .10	3.450	-.110	.483	.011	.037	Yes
		Scope - Business Unit	F(2,78) = 1.356, p > .10	3.071	.038	.790	.030	.034	Yes

Table 31. Linear Regression Results for Hypothesis H_{4B}

Hypothesis H_{4B}:		There will be no significant relationship between a firm-level *Reactor* strategy and adoption of an *Agile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Reactor	Agile	*-None-*	F(1,83) = 7.931, p < .01	2.853	.263	.006	.295	.087	No
		Environment - Business Unit	F(2,81) = 4.740, p < .05	2.439	.214	.042	.299	.105	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,81) = 2.720, p < .01	2.834	.269	.009	.295	.092	No
		Competition - Business Unit, Growth - Business Unit	F(3,74) = 6.186, p < .01	3.900	.272	.007	.327	.201	No
		Operating Experience - Business Unit	F(2,59) = 6.432, p < .001	2.443	.363	.001	.421	.179	No
		Scope - Business Unit	F(2,76) = 5.332, p < .01	3.225	.281	.003	.330	.123	No
Reactor	Agile - Speed & Flexibility	*-None-*	F(1,85) = 10.402, p < .01	2.730	.367	.002	.330	.109	No
		Environment - Business Unit	F(2,83) = 5.374, p < .05	2.500	.334	.011	.332	.115	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,82) = 3.318, p < .01	2.901	.384	.003	.322	.108	No
		Competition - Business Unit, Growth - Business Unit	F(3,75) = 4.950, p < .01	3.540	.371	.004	.356	.165	No
		Operating Experience - Business Unit	F(2,60) = 6.645, p < .01	2.452	.451	.001	.417	.181	No
		Scope - Business Unit	F(2,78) = 7.730, p < .001	3.569	.378	.001	.357	.165	No

Table 32. Linear Regression Results for Hypothesis H_{4C}

Hypothesis H_{4C}:		There will be no significant relationship between a firm-level *Reactor* strategy and adoption of a *Leagile* supply chain.							
Strategy Type	**Supply Chain Design**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Reactor	Leagile	*-None-*	F(1,82) = 6.669, p < .05	3.414	.198	.012	.274	.075	No
		Environment - Business Unit	F(2,80) = 5.247, p > .10	2.878	.133	.118	.277	.116	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,80) = 2.313, p < .05	3.319	.182	.030	.274	.080	No
		Competition - Business Unit, Growth - Business Unit	F(3,73) = 4.226, p < .05	3.904	.170	.049	.302	.148	No
		Operating Experience - Business Unit	F(2,58) = 5.203, p < .01	3.162	.267	.004	.382	.152	No
		Scope - Business Unit	F(2,75) = 4.351, p < .01	3.527	.215	.005	.317	.104	No

Hypothesis 5

Table 34. Mediation Test Results for Hypothesis 5

Hypothesis H5:		The more a firm adopts a *Lean* supply chain design, the more significant the connection between a *Defender* strategy and *Performance*.						
Strategy Type	**Supply Chain Design**	**Outcome Measure**	**Control Variables**	**Test 1**	**Test 2**	**Test 3**	**Sobel**	**Hypothesis Supported**
Defender - Cost Focus	Lean	Performance - Business Unit	*-None-*	Failed	Passed	Passed	---	No
			Environment - Business Unit	Failed	Passed	Passed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Passed	Passed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Passed	Failed	---	No
			Scope - Business Unit	Failed	Passed	Passed	---	No
Defender - Narrow Focus	Lean	Performance - Business Unit	*-None-*	Failed	Passed	Failed	---	No
			Environment - Business Unit	Failed	Passed	Passed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Passed	Failed	---	No
			Scope - Business Unit	Failed	Passed	Failed	---	No
Defender - Cost Focus	Lean	Profitability - Business Unit	*-None-*	Failed	Passed	Passed	---	No
			Environment - Business Unit	Failed	Passed	Passed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Passed	Passed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Passed	Passed	---	No
			Scope - Business Unit	Failed	Passed	Passed	---	No
Defender - Narrow Focus	Lean	Profitability - Business Unit	*-None-*	Failed	Passed	Failed	---	No
			Environment - Business Unit	Failed	Passed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Passed	Failed	---	No
			Scope - Business Unit	Failed	Passed	Failed	---	No
Defender - Cost Focus	Lean	Market Share Gains - Business Unit	*-None-*	Failed	Failed	Failed	---	No
			Environment - Business Unit	Failed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Failed	Failed	---	No
			Scope - Business Unit	Failed	Failed	Failed	---	No
Defender - Narrow Focus	Lean	Market Share Gains - Business Unit	*-None-*	Failed	Failed	Failed	---	No
			Environment - Business Unit	Failed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Failed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Failed	Failed	Failed	---	No
			Operating Experience - Business Unit	Failed	Failed	Failed	---	No
			Scope - Business Unit	Failed	Failed	Failed	---	No

Hypothesis 6

Table 35. Mediation Test Results for Hypothesis 6

Hypothesis H6:		The more a firm adopts an *Agile* supply chain design, the more significant the connection between a *Prospector* strategy and *Performance*.						
Strategy Type	**Supply Chain Design**	**Outcome Measure**	**Control Variables**	**Test 1**	**Test 2**	**Test 3**	**Sobel**	**Hypothesis Supported**
Prospector	Agile	Performance - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No
Prospector	Agile - Speed & Flexibility	Performance - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - New Markets	Agile	Performance - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No
Prospector - New Markets	Agile - Speed & Flexibility	Performance - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - Resources	Agile	Performance - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No

Strategy Type	Supply Chain Design	Outcome Measure	Control Variables	Test 1	Test 2	Test 3	Sobel	Hypothesis Supported
Prospector - Resources	Agile - Speed & Flexibility	Performance - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector	Agile	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector	Agile - Speed & Flexibility	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - New Markets	Agile	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - New Markets	Agile - Speed & Flexibility	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - Resources	Agile	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No

Strategy Type	Supply Chain Design	Outcome Measure	Control Variables	Test 1	Test 2	Test 3	Sobel	Hypothesis Supported
Prospector - Resources	Agile - Speed & Flexibility	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector	Agile	Market Share Gains - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No
Prospector	Agile - Speed & Flexibility	Market Share Gains - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - New Markets	Agile	Market Share Gains - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No
Prospector - New Markets	Agile - Speed & Flexibility	Market Share Gains - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Prospector - Resources	Agile	Market Share Gains - Business Unit	*-None-*	Passed	Passed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Passed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Passed	Failed	---	No

Strategy Type	Supply Chain Design	Outcome Measure	Control Variables	Test 1	Test 2	Test 3	Sobel	Hypothesis Supported
Prospector - Resources	Agile - Speed & Flexibility	Market Share Gains - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No

Hypothesis 7

Table 36. Mediation Test Results for Hypothesis 7

Hypothesis H7:		The more a firm adopts a *Leagile* supply chain design, the more significant the connection between an *Analyzer* strategy and *Performance*.						
Strategy Type	**Supply Chain Design**	**Outcome Measure**	**Control Variables**	**Test 1**	**Test 2**	**Test 3**	**Sobel**	**Hypothesis Supported**
Analyzer	Leagile	Performance - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Analyzer	Leagile	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Analyzer	Leagile	Market Share Gains - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Passed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No

Hypothesis 8

Table 37. Mediation Test Results for Hypothesis 8

Hypothesis H8:		The more a firm adopts a *Leagile* supply chain design, the more significant the connection between a *Reactor* strategy and *Performance*.						
Strategy Type	**Supply Chain Design**	**Outcome Measure**	**Control Variables**	**Test 1**	**Test 2**	**Test 3**	**Sobel**	**Hypothesis Supported**
Reactor	Leagile	Performance - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Failed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Reactor	Leagile	Profitability - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Failed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No
Reactor	Leagile	Market Share Gains - Business Unit	*-None-*	Passed	Failed	Failed	---	No
			Environment - Business Unit	Failed	Failed	Failed	---	No
			Uncertainty - Business Unit, Technology - Business Unit	Passed	Failed	Failed	---	No
			Competition - Business Unit, Growth - Business Unit	Passed	Failed	Failed	---	No
			Operating Experience - Business Unit	Passed	Failed	Failed	---	No
			Scope - Business Unit	Passed	Failed	Failed	---	No

Hypothesis 9

Table 39. Linear Regression Results for Hypothesis H_{9A}

Hypothesis H_{9A}:		A *Lean* supply chain design will positively correlate with *Reliability*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Lean	Reliability	*-None-*	F(1,88) = 2.474, p > .10	5.110	.128	.119	.165	.027	No
		Environment - Business Unit	F(2,86) = 1.229, p > .10	5.013	.125	.139	.165	.028	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 1.654, p > .10	5.001	.127	.127	.178	.055	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 1.734, p < .10	4.586	.162	.081	.230	.063	Yes
		Operating Experience - Business Unit	F(2,62) = 1.504, p < .10	4.937	.161	.088	.214	.046	Yes
		Scope - Business Unit	F(2,81) = 1.585, p > .10	4.810	.139	.110	.188	.038	No

Table 40. Linear Regression Results for Hypothesis H_{9B}

Hypothesis H_{9B}:		A *Lean* supply chain design will negatively correlate with *Responsiveness*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Lean	Responsiveness	*-None-*	F(1,88) = 0.000, p > .10	4.983	.001	.990	.001	.000	No
		Environment - Business Unit	F(2,86) = 0.068, p > .10	5.215	.006	.954	.001	.002	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 0.197, p > .10	4.784	-.001	.992	.001	.007	No
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 4.069, p > .10	3.378	.084	.432	.073	.134	No
		Operating Experience - Business Unit	F(2,63) = 0.582, p > .10	4.723	.102	.372	.121	.018	No
		Scope - Business Unit	F(2,81) = 0.440, p > .10	4.381	.009	.935	.025	.011	No

Table 41. Linear Regression Results for Hypothesis H_{9C}

Hypothesis H_{9C}:		A *Lean* supply chain design will negatively correlate with *Agility*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Lean	Agility	*-None-*	F(1,87) = 1.246, p > .10	3.919	.101	.267	.119	.014	No
		Environment - Business Unit	F(2,85) = 1.523, p > .10	3.189	.084	.353	.122	.035	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 1.054, p > .10	3.506	.082	.372	.119	.036	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 1.188, p > .10	3.449	.143	.148	.192	.044	No
		Operating Experience - Business Unit	F(2,63) = 0.527, p > .10	4.060	.071	.486	.098	.016	No
		Scope - Business Unit	F(2,80) = 0.783, p > .10	4.240	.107	.245	.121	.019	No
Lean	Agility - Upside	*-None-*	F(1,89) = 0.450, p > .10	4.001	.068	.504	.071	.005	No
		Environment - Business Unit	F(2,87) = 0.760, p > .10	3.379	.055	.587	.075	.017	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 0.738, p > .10	3.496	.050	.630	.071	.025	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 0.488, p > .10	3.738	.089	.417	.114	.018	No
		Operating Experience - Business Unit	F(2,64) = 0.445, p > .10	4.213	.036	.758	.052	.014	No
		Scope - Business Unit	F(2,82) = 0.293, p > .10	4.082	.079	.447	.082	.007	No
Lean	Agility - Downside	*-None-*	F(1,88) = 2.730, p > .10	3.729	.174	.102	.173	.030	No
		Environment - Business Unit	F(2,86) = 2.655, p > .10	2.813	.144	.182	.174	.058	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 1.474, p > .10	3.538	.147	.174	.164	.049	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 1.988, p < .05	2.995	.243	.040	.256	.071	No
		Operating Experience - Business Unit	F(2,63) = 0.587, p > .10	3.803	.130	.295	.134	.018	No
		Scope - Business Unit	F(2,81) = 1.452, p > .10	4.320	.170	.119	.159	.035	No

Table 42. Linear Regression Results for Hypothesis H_{9D}

Hypothesis H_{9D}:		A *Lean* supply chain design will positively correlate with reduction of *Costs*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Lean	Costs	*-None-*	F(1,83) = 1.078, p > .10	3.785	.088	.302	.113	.013	No
		Environment - Business Unit	F(2,81) = 1.175, p > .10	3.265	.073	.395	.113	.028	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,80) = 1.904, p > .10	3.574	.085	.318	.100	.067	No
		Competition - Business Unit, Growth - Business Unit	F(3,73) = 0.663, p > .10	4.148	.072	.444	.094	.027	No
		Operating Experience - Business Unit	F(2,60) = 0.198, p > .10	4.222	-.014	.889	-.006	.007	No
		Scope - Business Unit	F(2,76) = 1.174, p > .10	3.345	.097	.280	.147	.030	No
Lean	Costs – Total Supply Chain Management Costs	*-None-*	F(1,88) = 1.678, p > .10	3.704	.107	.199	.137	.019	No
		Environment - Business Unit	F(2,86) = 1.197, p > .10	3.308	.093	.274	.137	.027	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 1.542, p > .10	3.625	.111	.190	.130	.052	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 1.268, p > .10	4.154	.087	.341	.124	.046	No
		Operating Experience - Business Unit	F(2,64) = 0.214, p > .10	3.873	.059	.547	.079	.007	No
		Scope - Business Unit	F(2,81) = 1.826, p > .10	3.147	.122	.156	.177	.043	No
Lean	Costs – Cost of Goods Sold	*-None-*	F(1,84) = 1.420, p > .10	3.623	.118	.237	.129	.017	No
		Environment - Business Unit	F(2,82) = 2.092, p > .10	2.749	.095	.344	.130	.049	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,81) = 2.891, p > .10	3.189	.104	.285	.111	.097	No
		Competition - Business Unit, Growth - Business Unit	F(3,74) = 0.489, p > .10	3.860	.113	.298	.121	.019	No
		Operating Experience - Business Unit	F(2,60) = 0.682, p > .10	4.360	-.039	.723	-.023	.022	No
		Scope - Business Unit	F(2,77) = 0.847, p > .10	3.536	.134	.209	.147	.022	No

Table 43. Linear Regression Results for Hypothesis H_{9E}

Hypothesis H_{9E}:		A *Lean* supply chain design will positively correlate with *Asset Management Efficiency*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Lean	Asset Management Efficiency	*-None-*	F(1,90) = 0.301, p > .10	3.676	.051	.585	.058	.003	No
		Environment - Business Unit	F(2,88) = 0.371, p > .10	3.328	.039	.680	.057	.008	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 0.264, p > .10	3.504	.033	.726	.042	.009	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 1.671, p > .10	4.976	-.062	.512	-.081	.059	No
		Operating Experience - Business Unit	F(2,64) = 0.507, p > .10	4.178	-.046	.629	-.046	.016	No
		Scope - Business Unit	F(2,83) = 0.917, p > .10	3.113	.013	.896	.038	.022	No

Hypothesis 10

Table 44. Linear Regression Results for Hypothesis H_{10A}

Hypothesis H_{10A}:		An *Agile* supply chain design will negatively correlate with *Reliability*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Agile	Reliability	*-None-*	F(1,86) = 5.210, p < .05	4.567	.268	.025	.239	.057	No
		Environment - Business Unit	F(2,84) = 2.673, p < .05	4.297	.249	.044	.236	.060	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 3.233, p < .05	4.395	.281	.018	.239	.104	No
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 2.293, p < .05	3.788	.272	.038	.222	.082	No
		Operating Experience - Business Unit	F(2,61) = 2.501, p < .05	4.385	.300	.029	.274	.076	No
		Scope - Business Unit	F(2,79) = 3.277, p < .05	3.809	.312	.017	.248	.077	No
Agile - Speed & Flexibility	Reliability	*-None-*	F(1,88) = 7.724, p < .01	4.518	.258	.007	.284	.081	No
		Environment - Business Unit	F(2,86) = 3.750, p < .01	4.545	.258	.008	.283	.080	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 4.111, p < .01	4.317	.267	.005	.297	.127	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 3.311, p < .01	3.820	.275	.008	.300	.113	No
		Operating Experience - Business Unit	F(2,62) = 4.173, p < .01	4.256	.301	.005	.341	.119	No
		Scope - Business Unit	F(2,81) = 4.980, p < .01	3.602	.320	.003	.301	.109	No

Table 45. Linear Regression Results for Hypothesis H_{10B}

Hypothesis H_{10B}:		An *Agile* supply chain design will negatively correlate with *Responsiveness*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Agile	Responsiveness	*-None-*	F(1,87) = 0.029, p > .10	5.080	-.025	.865	-.018	.000	No
		Environment - Business Unit	F(2,85) = 0.083, p > .10	5.294	-.018	.905	-.023	.002	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 0.135, p > .10	4.922	-.036	.812	-.018	.005	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 4.068, p > .10	3.359	.047	.756	-.072	.135	No
		Operating Experience - Business Unit	F(2,62) = 0.209, p > .10	4.858	.069	.685	.054	.007	No
		Scope - Business Unit	F(2,80) = 0.367, p > .10	4.323	.028	.860	.006	.009	No
Agile - Speed & Flexibility	Responsiveness	*-None-*	F(1,87) = 0.548, p > .10	4.590	.088	.461	.079	.006	No
		Environment - Business Unit	F(2,85) = 0.405, p > .10	4.921	.099	.419	.077	.009	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 0.285, p > .10	4.428	.085	.480	.079	.010	No
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 4.323, p > .10	3.094	.105	.386	.020	.143	No
		Operating Experience - Business Unit	F(2,62) = 0.339, p > .10	4.735	.088	.516	.091	.011	No
		Scope - Business Unit	F(2,80) = 1.282, p > .10	3.432	.181	.178	.120	.031	No

Table 46. Linear Regression Results for Hypothesis H_{10C}

Hypothesis H_{10C}:		An *Agile* supply chain design will positively correlate with *Agility*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Agile	Agility	*-None-*	F(1,86) = 11.019, p < .01	2.662	.415	.001	.337	.114	Yes
		Environment - Business Unit	F(2,84) = 6.140, p < .01	2.289	.402	.002	.349	.128	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 4.293, p < .01	2.269	.406	.002	.337	.133	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 3.845, p < .01	1.984	.423	.002	.330	.130	Yes
		Operating Experience - Business Unit	F(2,62) = 4.881, p < .01	2.648	.423	.004	.358	.136	Yes
		Scope - Business Unit	F(2,79) = 5.813, p < .01	2.552	.440	.001	.358	.128	Yes
Agile	Agility - Upside	*-None-*	F(1,88) = 10.051, p < .01	2.462	.448	.002	.320	.103	Yes
		Environment - Business Unit	F(2,86) = 5.633, p < .01	2.250	.451	.002	.339	.116	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 3.820, p < .01	2.041	.436	.003	.320	.118	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 3.259, p < .01	1.964	.441	.004	.311	.110	Yes
		Operating Experience - Business Unit	F(2,63) = 5.617, p < .01	2.246	.512	.002	.379	.151	Yes
		Scope - Business Unit	F(2,81) = 5.830, p < .01	2.066	.501	.001	.353	.126	Yes
Agile	Agility - Downside	*-None-*	F(1,86) = 5.499, p < .05	3.062	.349	.021	.245	.060	Yes
		Environment - Business Unit	F(2,84) = 3.378, p < .05	2.417	.307	.049	.246	.074	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 2.363, p < .05	2.746	.346	.023	.245	.078	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 2.176, p < .05	2.215	.371	.025	.245	.078	Yes
		Operating Experience - Business Unit	F(2,62) = 1.336, p > .10	3.321	.273	.123	.196	.041	No
		Scope - Business Unit	F(2,79) = 2.349, p < .05	3.318	.330	.039	.235	.056	Yes
Agile - Speed & Flexibility	Agility	*-None-*	F(1,86) = 11.163, p < .01	2.867	.337	.001	.339	.115	Yes
		Environment - Business Unit	F(2,84) = 6.200, p < .01	2.417	.322	.002	.347	.129	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 4.373, p < .01	2.421	.329	.002	.339	.135	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 3.055, p < .01	2.563	.299	.007	.307	.106	Yes
		Operating Experience - Business Unit	F(2,62) = 4.837, p < .01	2.833	.338	.004	.364	.135	Yes
		Scope - Business Unit	F(2,79) = 7.734, p < .001	2.230	.417	.000	.399	.164	Yes

Supply Chain Design	Supply Chain Outcome	Control Variables	Regression Equation	B	Beta	*p*	r	R^2	Hypothesis Supported
Agile - Speed & Flexibility	Agility - Upside	*-None-*	F(1,88) = 9.221, p < .01	2.753	.348	.003	.308	.095	Yes
		Environment - Business Unit	F(2,86) = 5.073, p < .01	2.460	.341	.004	.320	.106	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 3.611, p < .01	2.263	.339	.004	.308	.112	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 2.277, p < .05	2.653	.293	.017	.270	.080	Yes
		Operating Experience - Business Unit	F(2,63) = 4.651, p < .01	2.621	.377	.005	.354	.129	Yes
		Scope - Business Unit	F(2,81) = 6.876, p < .001	1.839	.451	.000	.370	.145	Yes
Agile - Speed & Flexibility	Agility - Downside	*-None-*	F(1,88) = 7.814, p < .01	3.023	.330	.006	.286	.082	Yes
		Environment - Business Unit	F(2,86) = 4.889, p < .05	2.300	.294	.017	.286	.102	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,85) = 2.952, p < .01	2.740	.315	.010	.279	.094	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,78) = 2.453, p < .05	2.434	.310	.018	.269	.086	Yes
		Operating Experience - Business Unit	F(2,63) = 2.268, p < .05	3.090	.289	.041	.259	.067	Yes
		Scope - Business Unit	F(2,81) = 4.712, p < .01	2.476	.388	.003	.318	.104	Yes

Table 47. Linear Regression Results for Hypothesis H_{10D}

Hypothesis H_{10D}:		An *Agile* supply chain design will negatively correlate with reduction of *Costs*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Agile	Costs	*-None-*	F(1,81) = 5.920, p < .05	2.973	.282	.017	.261	.068	No
		Environment - Business Unit	F(2,79) = 2.901, p < .05	2.917	.279	.025	.261	.068	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,79) = 3.100, p < .05	2.846	.273	.020	.261	.105	No
		Competition - Business Unit, Growth - Business Unit	F(3,72) = 2.452, p < .05	2.914	.311	.017	.302	.093	No
		Operating Experience - Business Unit	F(2,59) = 2.169, p < .05	2.964	.276	.047	.258	.069	No
		Scope - Business Unit	F(2,74) = 5.256, p < .01	1.979	.380	.002	.324	.124	No
Agile	Costs – Total Supply Chain	*-None-*	F(1,86) = 4.417, p < .05	3.122	.248	.038	.221	.049	No
		Environment - Business Unit	F(2,84) = 2.167, p < .10	2.986	.236	.059	.219	.049	No
		Uncertainty - Business Unit,	F(3,84) = 1.928, p < .05	3.125	.240	.047	.221	.064	No

	Management Costs	Technology - Business Unit							
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 2.159, p < .10	3.237	.239	.061	.254	.078	No
		Operating Experience - Business Unit	F(2,63) = 1.837, p < .10	2.988	.264	.060	.235	.055	No
		Scope - Business Unit	F(2,79) = 4.700, p < .01	2.012	.354	.005	.288	.106	No
Agile	Costs – Cost of Goods Sold	*-None-*	F(1,82) = 6.913, p < .05	2.645	.355	.010	.279	.078	No
		Environment - Business Unit	F(2,80) = 3.577, p < .05	2.434	.346	.016	.284	.082	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,80) = 4.632, p < .05	2.312	.333	.014	.279	.148	No
		Competition - Business Unit, Growth - Business Unit	F(3,73) = 3.065, p < .01	2.262	.428	.004	.333	.112	No
		Operating Experience - Business Unit	F(2,59) = 2.410, p < .10	2.949	.292	.060	.248	.076	No
		Scope - Business Unit	F(2,75) = 4.338, p < .01	2.094	.427	.004	.318	.104	No
Agile - Speed & Flexibility	Costs	*-None-*	F(1,82) = 4.117, p < .05	3.300	.190	.046	.219	.048	No
		Environment - Business Unit	F(2,80) = 2.383, p < .10	2.949	.172	.080	.219	.056	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,79) = 2.506, p < .10	3.117	.183	.052	.210	.087	No
		Competition - Business Unit, Growth - Business Unit	F(3,72) = 1.488, p < .10	3.500	.180	.080	.228	.058	No
		Operating Experience - Business Unit	F(2,59) = 1.723, p < .10	3.199	.197	.078	.234	.055	No
		Scope - Business Unit	F(2,75) = 5.403, p < .01	1.930	.313	.002	.301	.126	No
Agile - Speed & Flexibility	Costs – Total Supply Chain Management Costs	*-None-*	F(1,87) = 3.437, p < .10	3.363	.175	.067	.195	.038	No
		Environment - Business Unit	F(2,85) = 1.914, p > .10	3.073	.160	.106	.194	.043	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 1.634, p < .10	3.315	.171	.078	.189	.055	No
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 1.476, p > .10	3.741	.129	.204	.182	.054	No
		Operating Experience - Business Unit	F(2,63) = 1.774, p < .10	3.116	.209	.064	.229	.053	No
		Scope - Business Unit	F(2,80) = 5.345, p < .01	1.896	.308	.003	.282	.118	No
Agile - Speed & Flexibility	Costs – Cost of Goods Sold	*-None-*	F(1,83) = 4.437, p < .05	3.083	.233	.038	.225	.051	No
		Environment - Business Unit	F(2,88) = 0.329, p > .10	3.572	-.037	.738	-.018	.007	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,80) = 3.825, p < .05	2.660	.217	.046	.214	.125	No
		Competition - Business Unit, Growth - Business Unit	F(3,73) = 1.998, p < .05	2.953	.276	.020	.275	.076	No
		Operating Experience - Business Unit	F(2,59) = 1.700, p > .10	3.300	.186	.136	.211	.054	No
		Scope - Business Unit	F(2,76) = 3.681, p < .01	2.121	.330	.009	.280	.088	No

Table 48. Linear Regression Results for Hypothesis H_{10E}

Hypothesis H_{10E}:		An *Agile* supply chain design will negatively correlate with *Asset Management Efficiency*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Agile	Asset Management Efficiency	*-None-*	F(1,88) = 1.407, p > .10	4.494	-.157	.239	-.125	.016	No
		Environment - Business Unit	F(2,86) = 0.762, p > .10	4.369	-.170	.221	-.129	.017	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,86) = 0.631, p > .10	4.272	-.168	.215	-.125	.022	No
		Competition - Business Unit, Growth - Business Unit	F(3,79) = 1.832, p > .10	5.389	-.153	.246	-.065	.065	No
		Operating Experience - Business Unit	F(2,63) = 0.504, p > .10	4.334	-.099	.474	-.086	.016	No
		Scope - Business Unit	F(2,81) = 1.551, p > .10	4.221	-.201	.159	-.169	.037	No
Agile - Speed & Flexibility	Asset Management Efficiency	*-None-*	F(1,90) = 0.025, p > .10	3.949	-.017	.876	-.017	.000	No
		Environment - Business Unit	F(2,88) = 0.329, p > .10	3.572	-.037	.738	-.018	.007	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,87) = 0.148, p > .10	3.786	-.035	.745	-.032	.005	No
		Competition - Business Unit, Growth - Business Unit	F(3,80) = 1.379, p > .10	4.710	-.006	.951	.026	.049	No
		Operating Experience - Business Unit	F(2,64) = 0.264, p > .10	3.860	.015	.891	.029	.008	No
		Scope - Business Unit	F(2,83) = 0.760, p > .10	3.560	-.054	.650	-.076	.018	No

Hypothesis 11

Table 49. Linear Regression Results for Hypothesis H_{11A}

Hypothesis H_{11A}:		A *Leagile* supply chain design will positively correlate with *Reliability*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Leagile	Reliability	*-None-*	$F(1,84) = 12.477, p < .001$	3.570	.491	.001	.360	.129	Yes
		Environment - Business Unit	$F(2,82) = 6.030, p < .01$	3.580	.488	.001	.358	.128	Yes
		Uncertainty - Business Unit, Technology - Business Unit	$F(3,82) = 5.372, p < .001$	3.595	.497	.001	.360	.164	Yes
		Competition - Business Unit, Growth - Business Unit	$F(3,75) = 4.303, p < .01$	3.036	.493	.001	.363	.147	Yes
		Operating Experience - Business Unit	$F(2,59) = 4.931, p < .01$	3.518	.496	.003	.378	.143	Yes
		Scope - Business Unit	$F(2,77) = 7.710, p < .001$	2.645	.586	.000	.393	.167	Yes

Table 50. Linear Regression Results for Hypothesis H_{11B}

Hypothesis H_{11B}:		A *Leagile* supply chain design will positively correlate with *Responsiveness*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Leagile	Responsiveness	*-None-*	$F(1,85) = 0.058, p > .10$	4.800	.044	.810	.026	.001	No
		Environment - Business Unit	$F(2,83) = 0.233, p > .10$	5.140	.076	.695	.023	.006	No
		Uncertainty - Business Unit, Technology - Business Unit	$F(3,83) = 0.111, p > .10$	4.730	.036	.849	.026	.004	No
		Competition - Business Unit, Growth - Business Unit	$F(3,76) = 4.125, p > .10$	2.900	.172	.354	.009	.140	No
		Operating Experience - Business Unit	$F(2,60) = 0.669, p > .10$	4.348	.194	.354	.126	.022	No
		Scope - Business Unit	$F(2,78) = 0.545, p > .10$	3.855	.140	.493	.070	.014	No

Table 51. Linear Regression Results for Hypothesis H_{11C}

Hypothesis H_{11C}:		A *Leagile* supply chain design will positively correlate with *Agility*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Leagile	Agility	*-None-*	F(1,84) = 10.531, p < .01	2.170	.507	.002	.334	.111	Yes
		Environment - Business Unit	F(2,82) = 5.667, p < .01	1.931	.491	.003	.344	.121	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,82) = 3.840, p < .01	1.914	.485	.003	.334	.123	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,75) = 3.726, p < .01	1.743	.512	.002	.347	.130	Yes
		Operating Experience - Business Unit	F(2,60) = 3.538, p < .05	2.439	.449	.015	.314	.105	Yes
		Scope - Business Unit	F(2,77) = 6.739, p < .001	1.881	.595	.000	.386	.149	Yes
Leagile	Agility - Upside	*-None-*	F(1,86) = 9.009, p < .01	1.989	.532	.004	.308	.095	Yes
		Environment - Business Unit	F(2,84) = 4.927, p < .01	1.900	.540	.004	.324	.105	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 3.271, p < .01	1.700	.506	.006	.308	.105	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 2.975, p < .01	1.750	.522	.005	.314	.104	Yes
		Operating Experience - Business Unit	F(2,61) = 3.800, p < .05	2.070	.525	.012	.321	.111	Yes
		Scope - Business Unit	F(2,79) = 6.335, p < .001	1.375	.659	.001	.371	.138	Yes
Leagile	Agility - Downside	*-None-*	F(1,84) = 6.630, p < .05	2.460	.472	.012	.270	.073	Yes
		Environment - Business Unit	F(2,82) = 3.741, p < .05	1.986	.418	.034	.271	.084	Yes
		Uncertainty - Business Unit, Technology - Business Unit	F(3,82) = 2.504, p < .05	2.284	.458	.016	.270	.084	Yes
		Competition - Business Unit, Growth - Business Unit	F(3,75) = 2.608, p < .05	1.800	.496	.013	.292	.094	Yes
		Operating Experience - Business Unit	F(2,60) = 1.211, p > .10	3.054	.322	.144	.192	.039	No
		Scope - Business Unit	F(2,77) = 3.402, p < .05	2.617	.497	.013	.282	.081	Yes

Table 52. Linear Regression Results for Hypothesis H_{11D}

Hypothesis H_{11D}:		A *Leagile* supply chain design will positively correlate with reduction of *Costs*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Leagile	Costs	*-None-*	$F(1,79) = 4.325, p < .05$	2.804	.304	.041	.228	.052	Yes
		Environment - Business Unit	$F(2,77) = 2.122, p < .10$	2.740	.297	.059	.228	.052	Yes
		Uncertainty - Business Unit, Technology - Business Unit	$F(3,77) = 2.554, p < .05$	2.670	.302	.043	.228	.091	Yes
		Competition - Business Unit, Growth - Business Unit	$F(3,70) = 1.748, p < .05$	2.882	.318	.046	.259	.070	Yes
		Operating Experience - Business Unit	$F(2,57) = 0.868, p > .10$	3.144	.216	.218	.168	.030	No
		Scope - Business Unit	$F(2,72) = 4.750, p < .01$	1.643	.457	.004	.321	.117	Yes
Leagile	Costs – Total Supply Chain Management Costs	*-None-*	$F(1,84) = 3.471, p < .10$	2.942	.275	.066	.199	.040	Yes
		Environment - Business Unit	$F(2,82) = 1.707, p > .10$	2.834	.259	.102	.198	.040	Yes
		Uncertainty - Business Unit, Technology - Business Unit	$F(3,82) = 1.669, p < .10$	2.953	.274	.071	.199	.058	Yes
		Competition - Business Unit, Growth - Business Unit	$F(3,75) = 1.726, p > .10$	3.271	.242	.123	.224	.065	Yes
		Operating Experience - Business Unit	$F(2,61) = 0.992, p > .10$	2.994	.246	.164	.177	.032	No
		Scope - Business Unit	$F(2,77) = 4.582, p < .01$	1.616	.441	.006	.296	.106	Yes
Leagile	Costs – Cost of Goods Sold	*-None-*	$F(1,80) = 5.810, p < .05$	2.319	.405	.018	.260	.068	Yes
		Environment - Business Unit	$F(2,78) = 2.998, p < .05$	2.131	.389	.031	.264	.071	Yes
		Uncertainty - Business Unit, Technology - Business Unit	$F(3,78) = 4.194, p < .05$	1.977	.386	.022	.260	.139	Yes
		Competition - Business Unit, Growth - Business Unit	$F(3,71) = 2.533, p < .01$	1.996	.479	.008	.307	.097	Yes
		Operating Experience - Business Unit	$F(2,57) = 1.194, p > .10$	3.163	.219	.253	.164	.040	No
		Scope - Business Unit	$F(2,73) = 4.342, p < .01$	1.569	.536	.004	.324	.106	Yes

Table 53. Linear Regression Results for Hypothesis H_{11E}

Hypothesis H_{11E}:		A *Leagile* supply chain design will positively correlate with *Asset Management Efficiency*.							
Supply Chain Design	**Supply Chain Outcome**	**Control Variables**	**Regression Equation**	**B**	**Beta**	***p***	**r**	**R^2**	**Hypothesis Supported**
Leagile	Asset Management Efficiency	*-None-*	F(1,86) = 0.929, p > .10	4.548	-.160	.338	-.103	.011	No
		Environment - Business Unit	F(2,84) = 0.522, p > .10	4.424	-.180	.310	-.106	.012	No
		Uncertainty - Business Unit, Technology - Business Unit	F(3,84) = 0.487, p > .10	4.340	-.180	.292	-.103	.017	No
		Competition - Business Unit, Growth - Business Unit	F(3,77) = 1.920, p > .10	5.580	-.196	.225	-.086	.070	No
		Operating Experience - Business Unit	F(2,61) = 0.580, p > .10	4.563	-.145	.401	-.100	.019	No
		Scope - Business Unit	F(2,79) = 1.624, p > .10	4.516	-.267	.141	-.172	.039	No