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Investigating the Role of Strategic Purchasing Relationship with Supply Chain Management in Startups Company

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Abstract

Today, company start-ups are constantly paying attention to meeting customer demand to protect their competitive advantage over their competitors. This research tested four hypotheses on the relationship of strategic purchasing to supply chain management. The hypotheses were tested with a survey of purchasing executives and the results were analyzed using a regression analysis. All of the hypothesized relationships were supported. The results indicate that strategic purchasing is positively related to supplier responsiveness, changes in the supplier market, supplier communication and the firm's performance. Managerial and research implications are discussed.

Keywords: Strategic purchasing • Supply chain management • Startup company

Introduction

Supply chain management has received increased attention during the past five to ten years. Concurrently, the concept of strategic purchasing also has received attention. This paper first reviews the literature on supply chain management and then the literature on strategic purchasing. As a result of the literature, four hypotheses are presented and tested on the relationship between strategic purchasing and supply chain management.

Supply chain management

As stated in a recent trade journal, "While 'supply chain management' has certainly reached buzzword status, it carries somewhat more cachet than most other acronym-ready concepts". The concept has advanced to the point that an entire journal, Supply Chain Management Review, is dedicated to the concept and it is frequently addressed at conferences This sentiment that it has moved beyond a buzzword is echoed in the academic literature with comments such as, "The phrase 'supply chain partnership' has become common in today's business language" Although this quote refers to partnerships, in the general literature little difference seems to exist is the general concepts of supply chain partnerships and supply chain management. But to better understand what is meant by supply chain management, it is helpful to look at the historical development of the term. Many references to supply chain management refer to a 2015 article by Houlihan in which he argued that supply chain differs from classical materials and manufacturing in four respects:

- 1. The supply chain is viewed as a single entity rather than fragmented;
- 2. It calls for and depends on strategic decision making;
- 3. Inventory is viewed from a different perspective;
- 4. Integration rather than interface is required .

Shortly after Houlihan, Steven stated that achieving an integrated supply chain required a three phase process: identifying customer needs, determining

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cost options, and organizing options into a supply chain. At about this time, the concept of supply chain had gained much attention and summary comments said that the process gave major attention given to appropriate policies and procedures for supply integration (Jones and Riley, 2018). By 1991, the statement had been made that supply chain management had become a subject of increasing interest to academics, consultants and operational management. And guidelines for strategic implementation were provided (Scott and Westbrook, 2019). By 2018 the definition and focus of the supply chain management literature was summarized by Gentry (2018) when she stated that the philosophy of supply chain management extends the concept of partnerships into a multifirm effort to manage the total flow of goods inventory from the supplier to the ultimate consumer. The chain is viewed as a whole, a single entity rather than fragmented groups, each performing its own function. The importance of "partnership" within the supply chain is substantiated by a number of scholars. For instance, Burnes and New (2019) emphasize the importance of partnership sourcing for supply chain improvement. And Slack and Bates (2017) stress that partnerships are critical to the successful management of the supply chain. And Lamming (2015) strongly implies that partnerships are necessary for a lean supply process. The role of purchasing was always implied in discussions about the supply chain. However, as the supply chain management concept developed in both practice and the academic literature, specific implications for purchasing began to be addressed. Cooper and Ellram (2018) addressed both the role of logistics and purchasing and concluded that they could contribute to supply chain management in five ways including leadership, inventory management expertise, facilitate information links, provide negotiation expertise, and providing an interfirm perspective Novack and Simco (2019) provided a conceptual model of the purchasing process in the supply chain. They maintained that purchasing is the key intermediary between members of the supply chain. These authors also offered a four step process for managing procurement in the supply chain. The point being made is that it is essential that purchasing serve an integral, if not a primary role, in the management of the supply chain (Leenders et al., 2018).

Strategic purchasing

While supply chain management was gaining attention in both practice and the academic literature, the concept of strategic purchasing has also been emerging. Just recently an empirical definition of strategic purchasing was developed by Carr and Smeltzer (2017). By means of a literature review and empirical research, they found three factors to be indicators of strategic purchasing: (1) the purchasing function has a formally written longrange plan, (2) purchasing's long-range plan is reviewed and adjusted to match changes in the company's strategic plans on a regular basis, (3) purchasing's long-range plan includes the kinds of materials or services to be purchased.

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From this definition, it may be said that the purpose of strategic purchasing is to direct all purchasing activities toward opportunities consistent with the firm's capabilities to achieve its long-term goals. This perspective on strategic purchasing is consistent with the general strategy literature. In one of the more popular definitions of strategy, Quinn (2018) states that strategy is the plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole. As Certo and Peter (2014) state, strategy is the attempt to direct the firms activities toward a long-term goal. The idea of strategic purchasing began to emerge in the 2018s. But historically top management tended to view purchasing as having a passive role in the business organization. But during the [1] 1980s, purchasing began to hear that it was important to become involved in the corporate strategic planning process (Spekman and Hill, 2018). By the 2019s, both academics and managers were giving much more attention to strategic purchasing. Articles were written that indicated how the purchasing process could be linked to corporate strategic planning (Watts et al., 2012). And the importance of purchasing's involvement in strategic planning was often mentioned (Pearson and Gritzmacher, 2016; Freeman and Cavinato, 2019). A thorough review of the articles published on strategic purchasing was conducted by Ellram and Carr (2014). Based on the literature, a clear distinction between a strategic purchasing function and a clerical purchasing function was identified. Purchasing activities can be viewed along a spectrum which ranges from clerical to strategic. Pearson et al. (2016) indicate that at the clerical level the purchasing function will have low visibility, with a lengthy reporting relationship to top management. Thus, purchasing decisions are routine in nature. The clerical level includes basic purchasing activities such as order processing, expediting orders, following-up on orders, and selecting suppliers based on price. At this end of the spectrum, purchasing performance is based on efficiency measures (Reck and Long, 2018). Little interfunctional communication takes place because of purchasing's low visibility. Purchasing's job is to keep the factory running and the buyer often has no relevant professional qualifications (Keough, 2014). Freeman and Cavinato (2019) classify this level as basic financial planning. Planning centers around the budget process. Revenues and costs are forecasted for the year. and performance is evaluated on the basis of actual versus budget. The time horizon is sort, the focus is within the function, and the overriding objective is to meet budget goals. At the strategic level, purchasing activities are integrative. Pearson et al. (2016) state that strategic purchasing has a proactive, longterm focus. According to Reck and Long (2019), the cross functional training of purchasing professionals occurs. Permanent lines of communication are established with other functional areas. Professional development focuses on strategic elements of the competitive strategy. Purchasing performance is measured in terms of contributions to the firm's success. At this level, supplier management is critical (Keough, 2014). Purchasing's selects the right type of relationship with its suppliers and supplier relationships are strategically managed. While there was agreement on what constitutes strategic purchasing, Ellram and Carr (2014) concluded that the body of literature primarily consists of conceptual frameworks and exploratory findings based on empirical research. And, few of these articles attempt to link purchasing to the strategic management process. Although few articles linked purchasing to strategic planning, a general theme seemed to be developing that purchasing was becoming more strategic. As a result of a comprehensive study on the future of purchasing, Carter and Narasimhan (2016) concluded that purchasing's ability to impact strategic planning has increased in a number of firms. Spekman et al. (2014) recently noted that purchasing professionals have new opportunities to become strategic due to the rapidly changing competitive environment. The conclusion can be made that purchasing as a strategic function has gained in importance. Furthermore, it can be said that supply chain management has become a common concept in both organizational practice and the academic literature. And even though these two concepts are integral to each other, the impact of strategic purchasing on supply chain management has not been investigated. Even though several authors have stated purchasing is integral to supply chain management, the relationship has not been empirically tested (Cooper and Ellram, 2013; Novack and Simco, 2015; Leenders et al., 2014).

Hypotheses

purchasing has not been empirically tested, four hypotheses are presented and tested. The definition developed by Carr and Smeltzer (2017) was the foundation for the use of the term strategic purchasing when developing these hypotheses. The first hypothesis is based on the fact that a supply chain is a partnership.

A partnership implies that a supplier is responsive while the purchasing organization also can increase the supplier's responsiveness to purchasing requirements. Furthermore, the responsiveness should integrate to first and second tier suppliers.

H1: Strategic purchasing is positively related to the supplier's responsiveness to purchasing requirements.

The second hypothesis relates to the supplier market and is also based on the idea of integration among members of the supply chain. This hypotheses is based onthe literature cited earlier as well as practical principles presented in the literature. For instance [2] present seven principles of supply chain management of which one is, "Listen to signals of market demand and plan accordingly". Krajilic (2018) has also noted that increased changes in the supply market require higher levels of strategic purchasing. Supplier market could also include such factors as the number of suppliers in the market.

H2: Strategic purchasing is positively related to changes in the supplier market.

Hypothesis three is also concerned with the integration between members of the supply chain. More specifically, it relates to the communication among supply chain units. This hypothesis is based on the literature cited earlier that notes the importance of communication throughout the chain as well as the relationship of strategic purchasing to the firms purpose (Kraljic, 2016). Additional research has specifically found that information sources are related to buyers' strategic behavior (Spekman et al., 2015). Furthermore, Cox (2016) has presented a model of procurement management that emphasizes the importance of relationship communication.

H3: Strategic Purchasing is positively related to the level of communications between firms in the supply chain.

The final hypothesis relates to the firm's performance. The implication throughout the literature is that a supply chain management approach as well as strategic purchasing will enhance firms's performance. However, this hypotheses has not been formally tested prior to the research reported here.

H4: Strategic purchasing is positively related to the firm's performance.

Methodology

A survey methodology was used to test the hypotheses as part of a comprehensive research project. The survey was mailed to a large random sample of National Association of Purchasing Management (NAPM) members with titles such as Purchasing Manager, Director of Purchasing, Vice President of Purchasing, and Vice President of Materials Management. Each purchasing executive served as a first key informant. These individuals were selected because they were informed about the subject matter in the survey instrument. The purchasing executives were asked to identify an appropriate individual in the firm to serve as a second key informant, preferably the senior executive to the purchasing executive. The respondents for both surveys were asked questions regarding strategic purchasing, firm"s performance, and supplier management. The decision to survey the senior executive to the purchasing executive, as a second key informant, was based on a review of the literature, as well as discussions with purchasing executives and academics. In particular, it has been noted that Premkumar and Ramamurthy (2015), using a single informant from an organization could cause the results to be bias. The two groups of respondents were compared to determine inter-rater reliability. Then, the first sample was used to conduct exploratory factor analysis and the second sample was used to test the hypotheses.

Instrument

The survey instrument was developed based on an extensive review of the

literature. The review examined literature in the areas of strategic purchasing and supplier management. The survey included multiple scale items for each of the factors. The survey instrument was pre-tested by college level purchasing students for clarity and matching questions with the appropriate factor. Next, the survey was pretested for clarity by 7 purchasing executives, 8 academics and 30 purchasing professionals. Modifications were made to the survey based on the pre-test results. In an effort to increase the response rate, a modified version of Dillman's (2018) methodology was followed. All mailings were sent via first class mail. Reminder post cards were sent to all potential respondents one week after the initial mailing. For those who did not respond, additional cover letters and surveys were mailed 14 days and 21 days, respectively, after the initial mailing. Of the 2260 initial surveys mailed, a total of 122 was returned undelivered. From the remaining 2138 surveys mailed, a total of 739 usable responses was received and included in this study. This represents a response rate of 34.6% for the first key informants. The second sample consisted of 168 respondents. The samples consisted primarily of executives at the Director and Vice President level including: 409 Purchasing Directors (55%), 120 Vice Presidents of Purchasing (16%) and 60 Vice Presidents of Materials Management (8%). The sample included firms from a variety of industries. Industries most frequently represented were manufacturing, food, health, chemical, distribution, electronics, transportation, pharmaceutical, automotive, banking, and construction. The combined industries represented 410 manufacturing firms (55.6%) and 329 non-manufacturing firms (44.5%). Gross sales was used as an indicator of the firm's size. The average firm's gross sales in the sample was \$100 million. The distribution of gross sales per firm revealed that 275 firms (37.2%) had gross sales below \$100 million, 187 firms (25.3%) had gross sales between \$100 millions and \$500 million, and 215 firms (29.1%) hadgross sales over \$500 million. Sixty-four respondents (8.4%) did not provide this information. The next section presents the data analysis.

Data Analysis

A test for non-response bias was conducted by comparing the first wave of survey responses to the last wave of survey responses [3]. These tests resulted in no difference in the responses between early and late respondents, therefore, the conclusion was that no non-response bias existed. All of the factors in the model were measured by a number of survey scale items. Each factor had to undergo a scale development and purification process. The first key informant sample was used to develop the scales. For internal consistency of the scales, a correlation analysis and exploratory factor analysis were conducted to identify poor- fitting scale items. A measure of internal consistency is Cronbach's coefficient alpha. If internal consistency is high (above 0.70), then the scale items have a strong relationship to each other. Coefficient Alpha is defined as the proportion of a scale's total variance that is attributable to a common source. It is desired that coefficient alpha be above 0.70, however alpha levels between 0.50 and 0.60 are acceptable for exploratory research (Churchill, 2019). For this study coefficient alpha levels range between 0.53 and 0.84. The factors, their respective scales and the coefficient alpha levels are shown in Table 1.

Inter-rater reliability

The second key informant sample was used to test the hypotheses. Prior to conducting statistical analysis of the data, a comparison was made between the first and second samples. There are a number of ways to access inter-rater reliability. For this study, inter-rater reliability was measured using the interclass correlation (ICC) method. This ICC is calculated by a one-way ANOVA using firms as groups. The ANOVA statistically tests if within group variance (MSW) is negligible compared to between group variance (MSB). A list of the ICCs for scale items are shown in Table 2. The overall ICC for scales in this study was 0.50. This means that approximately 50% of the between group variance is free from variation within groups (firms). Research indicates that an exact percentage level for ICC has not been established in operations strategy literature; a minimum ICC level of 0.60—0.70 is suggested [4]. However, a previous study in the purchasing literature established that a gap exists between levels of management's perception of purchasing activities (Chao et al., 2013). The factor FP, which is not associated with purchasing

Table 1. Factors and their scale items.

| Factors and their respective scales | Standardized alpha |
|---|-----------------------|
| Level of Strategic Purchasing (LSP) VAR 1 — The purchasing function has a formally written long-range plan. (e.g., a 5—10 year plan). VAR 2 — Purchasing's long-range plan is reviewed strategic plans on a regular basis. VAR 3 — Purchasing's long-range plan includes the kinds of materials or services to be purchased | 0.8403 |
| Supplier Responsiveness (SR) VAR 1 — Purchasing can influence first tier supplier's responsiveness to purchasing requirements. VAR2 —Purchasing can influence second tier supplier's responsiveness to purchasing requirements. VAR 3 — Purchasing can influence in-bound transportation's responsiveness to purchasing requirements | 0.5344 |
| Supplier Communication (SC) VAR 1 — Our suppliers are involved in our strategic planning process. VAR 2 — We enter into special agreements with suppliers who have improved performance. VAR 3 — We have very frequent face to face planning/ communication with key suppliers. VAR 4 — There is joint planning committees/task force on key issues with key suppliers | 0.6942 |
| Change in Supplier Market (CSM) VAR 1 — The firm's supplier market has changed in the past three years with respect to the geographic location from which we procure products or services. VAR 2 — The firm's supplier market has changed in the past three years with respect to the number of suppliers offering materials that meet our specification requirements has increased. VAR 3 — The firm's supplier market has changed in the past three years with respect to the availability of substitute materials has increased. | 0.6036 |
| Firm's Performance (FP) VAR 1 — Return on investment over the past five years VAR 2 — Profits as a percent of sales over the past five years VAR 3 — The firm's sales over the past five years | 0.8015 |

Table 2. Interclass correlation.

| Factors and their respective scales | Interclass correlation (ICC) | | |
|-------------------------------------|---------------------------------|--|--|
| Level of Strategic Purchasing (LSP) | 0.48 | | |
| Supplier Communication (SC) | 0.43 | | |
| Supplier Responsiveness (SR) | 0.44 | | |
| Change in Supplier Market (CSM) | 0.45 | | |
| Firm's Performance (FP) | 0.68 | | |

activities, has an ICC level of 0.68. This indicates there is inter-rater agreement for the factor. The remaining ICC levels indicate a lower degree of inter-rater agreement since an ICC level of 0.60 is not an established rule, but a guideline. However, based on the exploratory nature of this study and the overall ICC level of 0.50 for the factors in Table 2, the degree of inter-rater agreement is adequate.

Testing the Hypotheses

Regression analysis is a statistical tool that utilizes the relation between two or more quantitative variables so that one variable can be predicted from the other, or others. For example, if one knows the relation between level of strategic purchasing and firms' performance, one can predict firms' performance by regression analysis once the level of strategic purchasing has been set. Regression analysis can be used to determine whether the relationship between the dependent variable and predictor variable is significant; and how much variance in the dependent variable is accounted for by the predictor variable. This research is not designed to test a causal model. The purpose is to simply understand the predictive relationship between a set of variables. The correlations between the factors in the regression models are shown in Table 3. The table list five factors including level of strategic purchasing (LSP), supplier communication (SC), supplier responsiveness (SR), change in the supplier market (CSM), and firm's performance (FP). Based on the correlation matrix, LSP is significantly correlated with all the other factors. Also, the other correlations between factors in Table 3 are significant at p (0.05, except for the correlation between the factors SC and CSM. This study tests a series of simple regression analysis models to determine whether the variable level of strategic purchasing is a predictor of supplier communication, supplier responsiveness, changes in the supplier market and firm performance. Since the focus of this study is to examine the role of strategic purchasing in supply chain management, only one predictor variable is used in each model. The results will show whether the regression models are able to survive the tests. If the models survive the analysis, the results will support further research to determine whether the predictor variable has a causal effect. The SAS' statistical procedure PROC Reg was used to analyze the data. The results for the four regressions are graphically presned in Figure 1. The regression model for hypothesis 1 is: SR"b 0 #b 1LSP#e. The model shows supplier responsiveness (SR) with respect to first tier, second tier suppliers and inbound transportation is influenced by strategic purchasing (LSP). Strategic purchasing (LSP) is measured in terms of three variables: purchasing has a formally written long-range plan, purchasing's long-range plan is reviewed and adjusted to match changes in the company's strategic plans on a regular basis,

Table 3. Correlation matrix of factors in regression models.

| Factor | LSP | SC | SR | CSM | FP |
|--------|-------|--------------------|-------|-------|-------|
| LSP | 1.000 | | | | |
| SC | 0.427 | 1.000 | | | |
| SR | 0.262 | 0.437 | 1.000 | | |
| CSM | 0.173 | 0.113 ^b | 0.257 | 1.000 | |
| FP | 0.306 | 0.305 | 0.196 | 0.080 | 1.000 |
| | | | | | |

^aN=160.

^bCorrelation not significant at <0.05

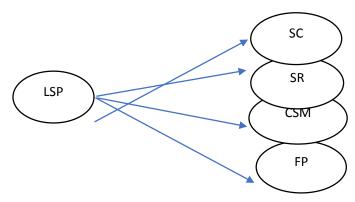


Figure 1. Regression model of relationships between strategic purchasing and supply chain management.

and purchasing's long-range plan includes the kinds of materials or services to be purchased. The regression model for hypothesis 2 is: CSM" b 0 #b 1 LSP#e. The model shows that changes in the supplier market with respect to the geographic dispersion of supplier locations, the number of suppliers able to meet the firms requirements, and the availability of substitute materials. Measures for strategic purchasing were mentioned previously. The regression model for hypothesis 3 is: SC" b 0 #b 1 LSP#e. The model shows supplier communication (SC) involving suppliers in the firm"s strategic planning process, entering into special agreements with suppliers who have improved performance, having very frequent face to face planning/communication with key suppliers, and using joint planning committees/task force on key issues with key suppliers. Measures for strategic purchasing (LSP) were mentioned previously. The regression model for hypothesis 4 is: FP"b 0 # b 1 LSP#e. The model shows that firm's performance (FP) with respect to return on investment, profits as a percent of sales, and the firm's sales is influenced by strategic purchasing and supplier responsiveness. Measures for strategic purchasing (LSP) mentioned previously. Based on the four hypotheses, factors were individually regressed on the factor strategic purchasing. Results are shown in Table 4. First, the factor supplier responsiveness was regressed strategic purchasing. The equation containing these factors accounted for 21% of the variance in supplier responsiveness, F (1,159)"42.9, p<0.001, adjusted R2"0.21. Second, the factor changes in the supplier market was regressed strategic purchasing. The equation containing these factors accounted for 7% of the variance in changes in the supplier market, F(1,159)"42.9, p(0.001, adjusted R2"0.07. Third, the factor supplier communication was regressed strategic purchasing. The equation containing these factors accounted for 50% of the variance in supplier communication, F(1,159)"161, p(0.001, adjusted R2"0.50. Fourth, the factor firm's performance was regressed strategic purchasing. The equation containing these factors accounted for 24% of the variance in firm's performance, F(1,159)"51.8, p<0.001, adjusted R2"0.24.

Interpretation: what is the relationship of strategic purchasing in supply chain management?

In an effort to answer the question "What is the relationship of strategic purchasing to supply chain management?" four hypotheses were offered and tested using regression analysis. The definition of strategic purchasing presented by [5] was the general perspective of strategic purchasing.

Note: The regression equations are shown in Appendix A.

Based on the results of the regression analyses, all of the hypothesized relationships were supported. The results indicate that strategic purchasing is positively related to supplier responsiveness, changes in the supplier market, supplier communication, and the firm's performance. All of the correlations were significant at p<0.001, and were in the predicted direction. Beginning with supplier responsiveness, it refers to strategic purchasing's ability to influence suppliers in the supply chain with respect to meeting the requirements of the firm. Firms that work closely with their suppliers are able to eliminate many obstacles that cause delays in obtaining materials and services from suppliers. The literature indicates that inefficient supply chains suffer from lack of integration between firms. Based on the results of this study, there is a significant relationship between strategic purchasing and performance of the suppliers in the supply chain, including first tier, second tier and in-bound transportation suppliers. This is important because it further supports the fact that higher levels of strategic purchasing are associated with an increased level of integrated activities between the firm and its suppliers in the supply chain. It was noted earlier that increased changes in the supply market require higher levels of strategic purchasing (Kraljic, 2015). Based on the significant

| Table 4 | Results of | regression | analysis |
|----------|------------|-------------|-----------|
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| Predictor | Dependent variable | Standardized estimate | t-value | F (1,159) | p-value< | Adjusted R ² |
|-----------|--------------------|--------------------------|---------|-----------|----------|-------------------------|
| LSP | SC | 0.4611 | 6.552 | 42.9 | 0.001 | 0.21 |
| LSP | SR | 0.2751 | 3.61 | 13 | 0.001 | 0.07 |
| LSP | CSM | 0.7095 | 12.69 | 161 | 0.001 | 0.50 |
| LSP | FP | 0.4956 | 7.195 | 51.8 | 0.001 | 0.24 |

relationship between strategic purchasing and the factor changes in the supplier market, the present research supports this concept. Higher levels of strategic purchasing are positively associated with increased changes in the supplier market. For purchasing, these changes involve qualifying more suppliers to meet the supply needs of the firm, identifying more sources of substitute materials to produce the firm's products, and expanding the geographical locations from which the firm sources materials and services. Although this relationship is not as strong as the other hypothesized relationships, it does support the belief that strategic purchasing positively impacts the supply chain.Further, supplier communication refers to the degree that buying and supplying firms engage in direct communications in terms of planning, interfacing, and establishing cooperative relationships. The literature indicates two way communication is important because it provides an opportunity for buyers to provide feedback to suppliers, as well as involve suppliers in efforts to improve the efficiency of the supply chain. Strategic purchasing is positively related to this effort to increase communications between the buying firm and its key suppliers. Therefore, a higher level of strategic purchasing is directly related to improved cooperation between buying and supplying firms in the supply chain. Not only is it important to show that strategic purchasing is positively related to the supply chain management, but it is important to demonstrate the value strategic purchasing add s to the firm. In support of previous empirical research conducted by Carter and Narasimhan (2016), this research indicates that strategic purchasing is positively related to the firm's performance. Based on these findings of this study, strategic purchasing adds value to supply chain management. In addition, strategic purchasing is a predictor of the firm's performance.

Discussion and Managerial Implications

This research provides a number of valuable findings and implications about purchasing and supply chain management. First, the positive relationship between supplier communication and strategic purchasing appears to be the strongest among all the hypothesized relationships in this study. This finding supports previous research in the marketing and purchasing literature that indicates the need to move away from adversarial relationships to more cooperative relationships between buying and supplying firms. The implications are that firms that have strategic purchasing also have higher levels of cooperation with their suppliers. The managerial implication is to emphasize "win-win" negotiations and alliance development. Second, supplier responsiveness and strategic purchasing are significantly related. Firms that have strategic purchasing are more likely to be able to impact the responsiveness of not only their first tier suppliers, but their second tier suppliers and in-bound transportation. In today's environment, the firms that get their products to market quicker have a competitive advantage. An increase in responsiveness from suppliers in the supply chain is an added advantage to these buying firm. The managerial challenge is to develop relationships with second and third tier suppliers as well as first tier suppliers. Third, strategic purchasing involves planning, evaluating, implementing and controlling purchasing strategies. Increasing supply options with respect to the available pool of qualified suppliers and substitute materials requires strategic purchasing. Firms that do strategic purchasing are more likely to better manage these changes in their supplier market. Finally, published research indicates that firms that do strategic planning are more successful than firms that do not have strategic planning (Bracker and Pearson, 2016). Strategic purchasing requires that purchasing's strategies are aligned with the firm's strategies and continuously updated to match changes in the firm's strategic plans. Increasing strategic purchasing should enable the firm to increase in the it's overall performance. Overall these findings support the general literature that advocates strategic planning and coordination among the supply chain. For instance, a recent article presents seven principles of supply chain management (Anderson et al., 2019). One principle is to source strategically and coordination is implicit in many of the otherprinciples. The research presented here confirms these general recommendations. These latter two findings provide empirical evidence that contemporary purchasing managers must be strategically oriented. Over a decade ago, Houlihan stated that the role of supply chain management is a new, critical perspective (Houlihan, 2015). The importance and validity of Houlihan's perspective is supported with this research. Strategic purchasing and supply chain management are positively related to the firm's performance. The research also helps answer the questions presented by Cox (2016), "How does one develop a proactive rather than reactive approach to external resource management?" "What is strategic procurement management?" The results of this research indicate that the answers include supplier communication, supplier responsiveness and managing changes in the supplier market through planning, reviewing and adjusting purchasing actions. The argument may be presented that it is self-evident that strategic purchasing should be related to the factors listed. But then it is not uncommon that information generated through research subsequently seems self-evident (Kerlinger, 2916). As Miller (2015) argues "Researchers would like 'overwhelming' results." Unfortunately, often once we confirm a hypothesis it seems rather evident; therefore, the results are not overwhelming. In this case, it may seem evident that strategic purchasing would be related to supplier communication or changes in the supplier market. With the evidence of the research reported here, empirical evidence is now available that confirms these beliefs. The phenomenon is now more certain.

Conclusion and Research Implications

This study began with a discussion of supply chain management. Although this is a relatively new concept in practice and the literature, supply chain management focuses on both cooperation and coordination. Further, hypotheses were developed to test the theory that strategic purchasing has an impact on the supply chain. Specifically, it was hypothesized that strategic purchasing impacts the level of cooperation and coordination between buying and supplying firms. The results indicate that strategic purchasing is positively related to supplier responsiveness, supplier communication, changes in the supplier market and the firm's performance. A limitation of this study is that it is based on a random sample from the NAPM data base. While the sample has similar characteristics with respect to the distribution of firms by industry and gross sales (Bureau of the Census, 2017), caution should be taken when attempting to generalize the research findings beyond the NAPM data base. Since this research primarily addressed a supply chain involving three firms, future research could expand this study to include additional supply chain members and functions within the firm. Also, future research could examine the impact of strategic purchasing and its interaction with conflict management in the supply chain. As in the case with any research, much work remains to be done to fully understand the relationship of strategic purchasing to supply chain management. However, the research reported here indicates that a relationship exists and presents a strong argument for strategic purchasing in supply chain management.

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