

**Roles of Purchasing Development and Complexity in Achieving Strategic Supplier
Leverage in Small and Medium Enterprises**

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Abstract. While small and medium enterprises (SMEs) far outnumber large multi-national enterprises (MNEs), relatively little research has been done on their procurement processes and, in particular, on ways in which they may be able to successfully compete with their larger competitors for advantageous supply arrangements. Obviously, except for cooperative arrangements, (SMEs) do not generally have the purchasing power of large companies to leverage lower prices through quantity discounts. Data from a survey of SMEs indicated that there appeared to be a relationship between the degree of complexity of their purchasing situation, the level of development of their purchasing practices, and their ability to effect strategic leverage with suppliers. Using factor analysis and structural equation modeling this study uses survey data to determine factors that contribute to purchasing development, purchasing complexity, and strategic supplier leverage in SMEs and to evaluate relationships between these factors. Purchasing complexity was found to involve technical process complexity and the use of suppliers as a resource. Purchasing development was found to involve development of tactical skills and higher level strategic skills, and supply base development. Strategic supplier leverage was found to involve buyers' ability to influence costs, and to achieve competitive advantage. Significant relationships were found between both purchasing complexity and purchasing development and strategic supplier leveraging.

Introduction. Purchasing leverage is thought of by many buyers as the ability to use large volume purchases to reduce the purchase price or acquire value-added services from suppliers. This is a common practice used by large multi-national enterprises (MNEs) to gain competitive advantage in pricing or other aspects of sourcing. Unfortunately, this is a technique that is not available to many small and medium enterprises (SMEs). Are there other ways that SMEs can make up for this inherent disadvantage in market clout? This study examines how SMEs potentially can use other strategic factors related to purchasing to gain purchasing leverage normally reserved only for large companies.

Studies have shown that an organization's purchasing strategy is a very effective way to gain and sustain competitive advantage, e.g. (Das and Handfield 1997). Also, purchasing power that results in purchase leverage is an important factor in determining the strategic contribution of the purchasing function, and it is considered to be a significant source of competitive advantage for buying organizations (Ramsey 2001). Clearly, many small and medium size organizations lack the purchase volumes necessary to secure significant leverage with suppliers. This of course renders them ineffective at gaining the same degree of competitive advantage as their larger competitors through these practices. This study examines the underlying strategic factors of purchasing development and complexity of purchases and how they may help SME managers to develop strategically sound alternatives that could help them to attain sustainable competitive advantage.

Objectives. Identify factors that contribute to purchasing development and purchasing complexity in small and medium enterprises, and test the hypotheses that higher levels of

these two constructs in SMEs can contribute to their ability to develop strategic leverage options with their suppliers.

THEORETICAL DEVELOPMENT

Small and Medium Enterprises (SMEs). SMEs are a major contributor of new jobs in the American economy. SMEs account for the creation of about two-thirds of the net new jobs in the United States (Birch 1979; Dennis, Phillips, and Starr 1994). It is also likely that jobs being created by SMEs make up for many jobs that are lost when large multi-national enterprises (MNE's) engage in outsourcing as a result of cyclical downsizing, restructuring, or merging activities. SMEs also play a critical role in developing new technologies and identifying and meeting unmet market needs (U. S. Small Business Administration, 1998). Unfortunately, SMEs also have high failure rates due most significantly to their inability to adequately use essential management practices (Monk 2000). Another major factor contributing to the high failure rates of new small or medium sized businesses is the fact that these organizations often lack many resources that are more easily afforded by MNE's. Examples of such resources include management expertise and management systems (Levy, Powell, and Galliers 1999). Also, due to limited resources, many SMEs lag behind their larger counterparts in the implementation of advanced information systems technology (Levy and Powell 2000).

Dollinger and Kolchin (1986) argue that an effective purchasing function is especially critical to the success of small business organizations. In many cases this is because their mere size diminishes their apparent market importance as customers and therefore places them at a disadvantage relative to large organizations in obtaining material and service resources. The subsequent result, they conclude, is that if a small business is unable to obtain necessary resources, it will fail. They also provide evidence that one way to mitigate this disadvantage is through application of the strategy of developing supplier partnerships.

Many SME organizations are driven by niche markets. SMEs use their niches to gain competitive advantage (Chaston and Mangles 1997). These organizations often rely on product innovation, technology, and superior quality to set them apart from the competition. They also tend to have flexible organizations that allow quick response to market situations. Such strategies and abilities gain strength from the complexity that results from development and application of innovations and technology in many niche markets. Development of purchasing practices and expertise by SMEs could contribute to realizing benefits from these types of strategies.

Many businesses use internal operational functions as a source of sustainable strategic competitive advantage. The procurement function is an example of one such functional area that has been growing in importance due to the increased strategic emphasis on outsourcing and supplier partnerships (Monczka, et al 1998). When upgraded from a tactical function to a strategic asset, more companies are finding sourcing and supplier partnering to be a significant contributor to sustaining a competitive advantage (Handfield and Nichols 1999). A major reason for the increased focus on purchasing is due to the continued growth of dollars spent on outsourcing by industrial organizations (Watts, Kim, and Hahn 1995). The trend of outsourcing non-core activities shows a consistent pattern of growth resulting from firms focusing on their core competencies (McCutcheon and Stuart 2000). Thus, as "make" is replaced by "buy," increased proportions of sales revenue are being absorbed by purchases of goods and services. This increase in volume, and the resulting increase in the variety and

scope of goods and services being procured, may contribute to increased purchasing complexity.

The continuous development of managerial skills is virtually a requirement in today's business climate. Hanks and Chandler (1994) argue that functional business managers become more specialized as the firm grows. As firms grow in size and complexity, business managers have to specialize to manage through the dominant problems facing their business. According to Hanks and Chandler, purchasing is one of those areas of specialization in larger MNEs. Due to many SME managers having to wear numerous "hats," functional specialization is not always available to SMEs. This limits the opportunity for SMEs to take advantage of purchasing as a strategic entity through organizational specialization. However, it should not limit their ability to generally improve purchasing strategies and expertise. Development of purchasing skills and abilities often results in such benefits as reduced costs, improved information, and improved competitiveness (Dollinger and Kolchin 1986). Small companies have fewer financial resources, so it is important for them not to waste money through poor purchasing practices (Presutti 1988). Presutti argues that a focused effort in developing purchasing skills and practices within smaller entities should result in significant strategic gains.

The preceding discussion suggests that taking advantage of inherent complexities and applying a developed purchasing skill set can play important roles in strategically meeting customer needs and improving organizational performance. Implementation of such actions would likely require frequent contact with suppliers. Das and Handfield (1997) found a strong positive correlation between contact with suppliers and organizational performance.

This discussion leads us to the proposition that complexity of purchases and purchasing situations, and development of the purchasing function both strategically and operationally are two approaches that can be used by SMEs to potentially gain strategic leverage with suppliers.

Purchasing Complexity. Kraljic (1983) identifies complex supply conditions as those involving supply risk and technical complexity. He also explores more advanced dimensions of complexity including product or service criticality and the management of specialized assets. Transaction cost theory indicates that when asset specificity is important to purchased products, such as specialized products developed to customer specifications, more complex and longer term contracting relationships are more efficient (Williamson 1985). Long-term relationships are based on a philosophy of commitment, trust, and coordination (Liedtka 1996). The interdependence of these factors injects additional complexity into supplier relationships. Ethical elements of commitment and trust are involved in every transaction, and without them, markets would not function. Long-term relationships based on a win-win basis with a small group of critical suppliers can lead to a sustainable competitive advantage (Elram 1996). Collaboration based on trust enables organizations to assimilate suppliers as resources providing information that leads to advantages that are rare and hard to duplicate. This facilitates a sustainable competitive advantage (Mariotti 1999).

The complexity of buyer-supplier relationships continues to evolve and increases in degree as products become more specialized and require more specialized processes to produce (Elram 1992). Traditional models based on market price continue to evolve with the elevation of the role of strategic relationships (Doktor, Tung, and Von Glinow 1991). Theories for managing

these relationships derive various elements from disciplines that include transaction cost analysis, organizational structure theory, and resource-based theory of the firm (Hoyt and Huq 2000). Approaches to managing buyer-seller relationships are based on the level of risk associated with transaction uncertainty, asset specificity, market competition, and the subsequent level of required governance (Dyer and Singh 1998; Chiles and McMackin 1996).

Strategic competitive advantages for SMEs that can emanate from complexity include providing expertise to their customers for the specific technical nature of their niche. Also, on the buying side of the business, complexity-related elements of entrepreneurial strength that SMEs can leverage from suppliers include: involving suppliers in the development of products or processes, leveraging supplier technical or other strengths, developing supplier relationships including an understanding of performance standards, and, ultimately, the potential for suppliers' sharing in the growth of the SME business (Heide and John 1990). To the degree that SMEs can develop and maintain such involvement with their suppliers, particularly if, due to their smaller size and possibly greater flexibility, they can do it to a greater degree than their larger competitors, such involvement represents a form of strategic supplier leverage for the SMEs.

Purchasing Development. Purchasing in some organizations is clerical in nature, but other organizations have a purchasing function that is highly developed and requires technical, managerial, or strategic orientation and skills. Determinants defining the purchasing development construct, and the subsequent contribution to strategically leveraging suppliers, do not appear to be fully explored in the literature.

One way to classify the degree of purchasing development in a company is to examine the skill level required of purchasing personnel. For example, changing procurement activities from transactional duties to strategic initiatives requires a different mix and a higher-level application of skill sets (Giunipero 2000). Various authors have proposed schemes for assessing the degree of development of purchasing or sourcing practices and strategies in a particular company. Several of them include four phases or levels of development. For example: Reck and Long (1988), Freeman and Cavinato (1990), and Monczka, Handfield, Giunipero, and Patterson (2009). Table 1. Summarizes a few of the results of these three studies. In general, these studies indicate that, for purchasing development to proceed to higher stages or levels, it must become more strategically integrated with the firm's overall strategies and the nature of supplier relationships must also change, becoming more strategic and integrative.

Table 1
Examples of Concepts of the Construct: “Purchasing Development”

Study:		Reck & Long (1988)	Freeman & Cavinato (1990)	Monczka, Handfield, Giunipero, & Patterson (2009)
Level				
I.	General Concept	Passive, reactive	Buying, basic financial planning	Basic beginnings, support function
	Supplier Relationships	Adversarial	Price reduction – oriented	Longer-term contracts
II.	General Concept	Independent. Purchasing strategy not linked to firm's	Purchasing, forecast-based planning	Moderate development, establish better supplier relationships
	Supplier Relationships	Variable	Quality, process efficiency	Ad-hoc supplier alliances
III.	General Concept	Supportive. Purchasing strategy supports firm's strategy	Procurement, externally oriented planning	Limited integration of supply management strategies
	Supplier Relationships	Suppliers viewed as firm's resource	Establish and develop relationships	Strategic supplier alliances
IV.	General Concept	Integrative. Purchasing strategy fully integrated with firm's competitive strategy	Supply, strategic management	Fully integrated supply chains, strategic orientation
	Supplier Relationships	Mutual interdependence	Management of commercial relationships	Full-service suppliers, systems approach across the entire supply chain

At its lowest phase, tactical purchasing does not have strategic direction and is often filled by clerical employees. At its highest phase, purchasing is completely integrated into the organization's competitive strategy. The role of the purchasing function is to structure and manage itself in order to support and enhance the firm's desired competitive advantage. An organization's purchasing management system must focus on the elements of competitive strategy that the organization considers essential to its overall success. By focusing on strategic issues, the purchasing function can contribute to the competitive position of organizations utilizing such strategic practices as reducing suppliers and establishing long term partnerships.

Development of the purchasing function to a strategic level includes viewing key suppliers as extensions of the buying organization (Anderson and Katz 1998). Utilizing suppliers as extensions of the company represents an integration that allows for the accurate communication of information between organizations. This cuts down on supply chain

volatility, reduces the bullwhip, and makes suppliers more responsive to changes in demand (Bagchi and Skjoett-Larsen 2002). Integrated supply chains have multiple communication points, shared compatible databases, and transparent information systems.

In summary, some recurring factors that have evolved from the literature in defining purchasing development are included in the list below (Kralijic 1983; Reck and Long 1988; Freeman and Cavinato 1990; Anderson and Katz 1998; Dobler and Burt 1996; Bagchi and Skjoett-Larsen 2002; Monczka, Handfield, Guinipero, and Paterson 2009).

1. The strategic planning horizon (strategic long term vs. short term)
2. Coordination of purchasing decisions with other stakeholders
3. Skills sets needed (including methods of supplier selection and purchasing performance measures)
4. Education levels required
5. Ability to ascertain supplier value add
6. Performance recognition
7. Types of supplier relationships
8. Levels of integration

Each of these factors has been identified to have the potential to individually contribute to and collectively affect the ability of an organization to leverage profitability and to achieve and sustain a competitive advantage through development of the purchasing function.

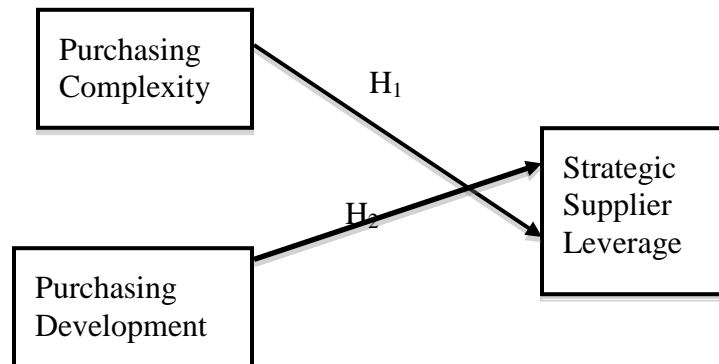
RESEARCH MODEL AND HYPOTHESES

This study investigates attributes affecting purchasing development, purchasing complexity, and the subsequent effect of these factors on the ability of an organization to achieve strategic leverage with its suppliers. Some examples of attributes identified in the literature that could affect purchasing complexity include: the degree of complexity in purchased products and the degree of complexity in the purchase process. Also, the rate of technological change of purchased items, and the degree of risk and uncertainty of supply could impact complexity.

Examples of attributes from the literature which could affect the purchasing development determinant include: types of supplier relationships, skills required by purchasing team members, degree of coordination between purchasing and other departments, and the degree to which purchasing strategy is integrated with overall company strategies. A complete list of attribute items considered and included in this study is in Appendix A.

Research Model. We propose a simple model that relates purchasing complexity, purchasing development, and strategic supplier leverage within organizations. The previously discussed factors affecting the determinants of purchasing complexity and development are examined and are hypothesized to have an effect on the ability of SMEs to leverage suppliers to improve an organization's competitive purchasing position (see Figure 1 below).

Figure 1
Research model for strategic supplier leverage



The main propositions underlying the model are that the more complex the firm's purchasing situation, the more potential for it to leverage supplier value to gain competitive advantage and, that a highly developed purchasing function is better positioned to leverage supplier value to gain competitive advantage. The purchasing function is not able to take advantage of a complex environment when it does not have developed skill sets. A firm would therefore have less capability to leverage suppliers. Abilities of the organization to capitalize on strategic initiatives and to achieve improved financial performance would also be reduced.

Research Hypotheses. This study has identified potential contributing factors to purchasing development and purchasing complexity. These factors will be examined for their affect on purchasing development, purchasing complexity, and strategic supplier leverage.

The first hypothesis proposes a link between purchasing complexity and the strategic supplier leverage of an organization.

Hypothesis 1. The purchasing complexity of an organization will have a significant positive effect on the ability of an organization to strategically leverage suppliers. Those attributes that contribute toward the complexity of the purchase function will in turn contribute toward improving the potential for strategic supplier leverage.

This first hypothesis guides the examination of the effect of those attributes that define an organization's purchasing complexity. Purchasing complexity could consist of a number of potential items including: broad scope of increased numbers of outsourced specialized functions, increasingly complex products, and additional risk factors associated with the management of these functions. This hypothesis is intended to study the effect that purchasing complexity has on achieving strategic supplier leverage.

The second hypothesis proposes a link between purchasing development and the strategic supplier leverage of an organization.

Hypothesis 2. The purchasing development of an organization will have a significant positive effect on the ability of an organization to strategically leverage suppliers. Those attributes that contribute toward defining the development of the purchase function will in turn contribute toward the potential for improving the strategic supplier leverage.

This second hypothesis guides the examination of the effect of managing those attributes that define an organization's purchasing development. These items include developing purchasing managerial skills and developing the supply base. This hypothesis is intended to study the effect that purchasing development has on achieving strategic supplier leverage.

According to Pearson and Ellram (1995) the purchasing function should affect financial performance and profitability for organizations assuming they can utilize the strategic strengths of the supplier. The three main reasons suppliers affect profitability include: a large percentage of an organization's revenue is used to purchase goods and services, supplier selection decisions have a large impact on product quality, and supplier relationships can have a significant impact on total cycle time. In this study we are implying that the more complex the purchasing situation and the more highly developed the purchasing function in a buying company, the greater the likelihood that benefits can be strategically leveraged from suppliers by SMEs.

DATA COLLECTION

A questionnaire that included the items in Appendix A was sent to a mailing list of over 1500 SME businesses. The list was developed through ReferenceUSA for a sampling of SMEs within four North American Industrial Classification System (NAICS) sub-sectors. These subsectors include machinery manufacturing, computer and electronic product manufacturing, electrical equipment manufacturing, and transportation equipment manufacturing. Respondents evaluated the items using a 7-point Likert scale that ranged from "strongly disagree" to strongly agree." Additional mailings and contacts of non-respondents resulted in an overall response rate of 14.4%.

In order to test for non-response bias, the late respondents contacted in the subsequent groups were compared with the earlier respondents of each group to determine if there were significant differences between the three groups (Armstrong and Overton 1977). When data was assimilated and the groups of data were combined and compared, no significant statistical differences were detected. Typical alpha values of data groups were at the 0.70 level. A lack of significant statistical differences indicated that the danger of non-response bias is low.

ANALYSIS AND RESULTS

A factor analysis was used first to identify item grouping and factors that contribute to the three constructs. Structural equation modeling was subsequently used to analyze the data and to test the research model. Support for the hypotheses is indicated by the path coefficients and the statistical significance of the corresponding t value for the path.

Factor Analysis. Thirty-five data items were used for the initial exploratory factor analysis. The factor analysis identified twenty-four items that loaded on the determinants of the constructs. Questions with low loadings (under .55) were eliminated from the factor analysis. Loadings of at least .30 or .40 are considered an indication of some degree of relationship

between the individual question and the component (Portney and Watkins 1993). The variables that load above the level of .50 were included in the component (Bernard 2000).

Purchasing Complexity and Purchasing Development Results. The items that loaded on the Purchasing Complexity and Purchasing Development determinants are listed in Table 2 below. The items that loaded on the Purchasing Complexity determinant generally grouped around two distinct strategic factors. One involved items that had a technical process complexity orientation (these are designated as TPC items in Table 2); the other items grouped around the concept of utilizing suppliers as a resource (these items are marked as SR in Table 2).

The specific items that loaded on the technical process complexity determinant included the following: product complexity, rate of change in product complexity, requirements and costs of switching suppliers, supplier investment in the relationship, and development of supply chain strategies. The items that loaded on the supplier as a resource determinant included the following: supplier selection based on a wide range of criteria, use of quantitative measures to evaluate purchasing performance, importance of purchasing in organization success, long-term supplier partnerships, and integration of key suppliers into company processes.

Table 2
Items loading on the Product Complexity and Purchasing Development Variables after a Varimax rotation

Items	Factor Category _a	Purchasing Complexity (PC)	Purchasing Development (PD)
Purchases are Technically Complex	TPC	0.820	
There is Rapid Technological Change in Purchases	TPC	0.672	
Major Changes Would be Required to Switch Suppliers	TPC	0.822	
Suppliers have Made Specific Investments to do Business with Us	TPC	0.974	
A Great Deal of Time is Devoted to Developing Supply Chain Strategies	TPC	0.944	
Supplier Selection is Based on A Wide Range of Criteria	SR	0.816	
Quantitative Measures are Used to Evaluate Purchasing Performance	SR	0.984	
Purchasing plays a major role in success of organization	SR	0.616	

Long Term Partnerships with Suppliers are Often Used	SR	0.908	
Key Suppliers are Integrated into Company Processes	SR	0.898	
Little Purchasing Time is Spent on Routine Transactions	DTS		0.896
Purchasing Requires Clerical Skills	DTS		0.812
Purchasing has Little or No Coordination with other Departments	DTS		0.595
Purchased Materials and Services are Readily Available	DSB		0.984
Substitute Sources of Supply are Readily Available	DSB		0.712
Purchases Influence the Quality of Produced Products	DSB		0.720
Purchases Influence Organizational Productivity	DSB		0.787
Purchasing Requires Analytical and Managerial Skills	DHSS		0.881
Planning is an Important Part of Purchasing	DHSS		0.902
Purchasing Strategy is Integrated with Overall Business Strategy	DHSS		0.527

^a TPC – Technical Process Complexity, SR – Supplier as a Resource, DTS – Developing Tactical Skills, DSB – Developing the Supply Base, DHLSS – Developing Higher Level Strategic Skills

The factors that loaded on the Purchasing Development determinant are grouped generally around the factors of developing tactical skills (DTS in Table 2), developing the supply base (DSS in Table 2), and developing the higher level strategic skills (DHLSS in Table 2).

The items loading specifically on the developing tactical skills determinant included: time spent on routine transactions, clerical skills, and degree of purchasing coordination with other departments. Items loading on the developing the supply base determinant include: Availability of purchased materials and services, availability of substitute sources of supply, influence of purchases on product quality, and influence of purchases on organizational productivity. Items loading on the developing higher-level strategic skills determinant include: analytical and managerial skills, importance of planning, and integration of purchasing strategy with overall business strategy.

Strategic Supplier Leverage. The items that loaded on the Strategic Supplier Leverage determinant generally describe the buyers' ability to influence costs and their company's ability

to achieve and sustain competitive advantage. Regardless of the means of attainment, purchasing leverage is identified with using purchasing to leverage value in the form of lower prices, lower total cost, or other value-adding benefits such as additional services from suppliers. The cost and strategic items loading on the strategic supplier leverage construct can be seen in Table 3 below.

The items that loaded on this determinant included minimizing purchase costs, and minimizing total costs. The ability of a buyer to strategically effect price and availability through supplier selection and the ability of the purchasing function to contribute to an organization's competitive advantage also aligned with this factor.

Reliability. Cronbach's Alpha coefficients are computed for each of the three components to measure the reliability of each component (listed in Table 4).

Coefficients from .50 to .75 represent moderate reliability, and values above .75 indicate good reliability (Portney and Watkins 1993). All three components have good reliability, and as a result, all the components are retained for further analysis. The associated correlation matrix shows moderate correlation between the purchasing complexity and purchasing development determinants and moderate correlation between the purchasing development and strategic supplier leverage determinant. The correlation is not strong enough to indicate significant influence from covariant relationships.

Structural Equation Model Results. The path coefficients for both the purchasing complexity and purchasing development constructs to strategic supplier leverage were found to be significant at the 0.05 alpha level. Thus, both Hypothesis 1 and Hypothesis 2 are supported. The results are provided in Table 5 below.

Table 3
Items Loading on the Strategic Supplier Leverage Variable after a Varimax Rotation

Item	Strategic Supplier Leverage (SSL)
The Goal of Purchasing is to Minimize Purchase Costs	0.985
The Goal of Purchasing is to Minimize Total Costs	0.915
The Goal of Purchasing is to Contribute to Competitive Advantage	0.648
Supplier Selection is Based on Price and Availability	0.770

Table 4
Chronbach's alpha and correlation matrix

	Chronbach's Alpha	PC	PD	SSL
PC	0.928	1.00		
PD	0.863	0.248	1.00	
SSL	0.849	0.139	0.276	1.00

Table 5
Structural model path coefficients and t values for hypothesis testing

Hypothesis	Path Coefficient	t Value
H1:	0.22	2.36 *
H2:	0.37	2.01 *

* $p < 0.05$

DISCUSSION

One goal of the study is to additionally define the attributes that contribute to the purchasing complexity and development constructs. Factors contributing to the purchasing complexity determinant include strategic initiatives associated with building supplier relationships. Important aspects of strategically capitalizing on suppliers include building long-term relationships, considering suppliers important resources, and integrating them into the process. Selecting and providing the proper performance measures for purchasing results are also a part of the construct. The work of purchasing professionals is considered important from the perspective of these respondents in building quality into the final product, in keeping a firm productive, and in contributing to the success of the organization.

The factors linking to purchasing development fell into the general classifications of developing tactical skills and of developing the supply base. The development of tactical skills includes developing daily operational skills of buyers, handling routine transactions, and coordinating with other departments. This factor also includes a buyer's ability to affect and support quality and productivity initiatives through supplier development opportunities. At more strategic levels, professional managerial and analytical skills are required to develop the supply base and identify and develop strategic leverage opportunities. The degree of development of these skills is linked to the ability to achieve strategic supplier leverage.

CONCLUSIONS

The overall research objective of the study proposes evaluating determinants of purchasing complexity and purchasing development and how they affect a company's ability to strategically leverage suppliers. The results of the study provide evidence linking purchasing complexity and purchasing development to strategic leveraging. In addition, this study provides foundations for further defining what is included in the constructs of strategic supplier leverage, purchasing development and purchasing complexity.

Several attributes are identified with strategic supplier leverage. Respondents to the mail survey indicate that strategic supplier leverage is affected when purchase costs are, not only reduced or minimized, but also, when the total cost of the product is reduced or minimized. Respondents also indicate that when lower pricing or other value-adding attributes from the supplier leads to competitive advantage, then strategic supplier leverage is achieved through the purchasing process. This result captures the notion that strategic supplier leverage is not just about reducing prices from suppliers, but leverage can be achieved from other factors, such as enhanced quality, integration of purchasing strategy with overall business strategy, and integration of suppliers into company processes that will drive lower purchase costs or lower total costs, or higher quality. All of these results can contribute to increasing the value proposition that is offered to customers of the company.

The results support the idea that purchasing complexity and the level of purchasing development affect the amount of strategic supplier leverage that can be achieved.

Managerial Implications and Contributions to the Decision Process. This study supports the argument that developing the purchasing function and enhancing supplier integration improves a company's ability to leverage strategic supplier sourcing. This model serves as a starting point for establishing criteria by which purchasing managers of SMEs can prioritize decision criteria. The results of this study can be used by managers to build decision criteria that can allow them to better formulate strategies for using suppliers as a resource.

Managers can leverage suppliers by emphasizing and enhancing the technical complexity of both the product and the process. Governance of suppliers, including establishing long-term relationships and measures by which to gauge supplier performance, also affects leveraging the supply base and improving performance.

Managers can further separate themselves from competition by developing both tactical and managerial skills. The results of this study support the concept that continuous development of the personnel skill base enhances a firm's ability to leverage skills of the supplier. Developing the supply base is an intricate process that includes careful development of substitutes, and complements, including the integration of suppliers in the product development process.

Limitations of the Study. This study is limited to four NAICS sub-sectors (Machinery Manufacturing, Computer and Electronic Manufacturing, Electrical Equipment, Appliance, and Component Manufacturing, and Transportation Equipment Manufacturing). Other industries may have significantly different purchasing requirements. In the future, this research should be extended to other industries testing national and international groups. In order to build on the information learned in this study, additional research should be conducted. This study also

lends itself to a longitudinal perspective. Additional research evaluating a longer term perspective could be useful to substantiate the findings of this study.

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APPENDIX A: POTENTIAL CONSTRUCT FACTORS

All items were rated by the respondents on a 1 to 7 Likert scale with 1 being "strongly disagree" and 7 being "strongly agree."

Purchases Influence the Quality of Produced Products
Purchased Goods and Services are a High Percentage of Total Costs
Purchases Influence Organizational Productivity
Purchases are Technically Complex

There is Rapid Technological Change in Purchases
Purchased Materials and Services are Readily Available
Substitute Sources of Supply are readily Available
There is Uncertainty in Purchase Market Conditions
Major Changes Would be Required to Switch Suppliers
Suppliers Have Made Specific Investments to do Business With Us
A High Proportion of Purchasing Time is Spent on Crises
Little of Purchasing Time is Spent Planning for the Future
A High Proportion of Purchasing Time is Spent on Routine Transactions
Little Purchasing Time is Spent on Routine Transactions
Planning is an Important Part of Purchasing
A Great Deal of Time is Spent on Developing Supply Strategies
Purchasing has Little or no Coordination With Other Departments
Purchasing is Involved Extensively With Cross Functional teams
Purchasing Strategy is Integrated With Overall Business Strategy
The Goal of Purchasing is to Minimize Purchase Costs
The Goal of Purchasing is to Minimize Total Costs
The Goal of Purchasing is to Contribute to Competitive Advantage
Purchasing Requires Clerical Skills
Purchasing Requires Analytical and Managerial Skills
Supplier Selection is Based On Price and Availability
Supplier Selection is Based on a Wide Range of Criteria
Quantitative Measures are Used to Evaluate Purchasing Performance
Suppliers are of Little Importance and Can Be Replaced
Suppliers are Considered to Be an Important Resource
Purchasing is Not Perceived as an Important Function
Purchasing Plays a Major Role in the Success of the Organization
Supplier Relationships are Mostly Short-Term and Arms-Length
Long Term Partnerships With Suppliers are Often Used
Suppliers are Completely Separate From Company Processes
Key Suppliers are Integrated into Company Processes