

ACHIEVING SUPPLIER LEVERAGE USING PURCHASING DEVELOPMENT

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ABSTRACT

Some small organizations lack leverage with suppliers, rendering them ineffective at gaining similar competitive advantages through procurement practices. Small businesses typically have a much smaller total dollar volume spend compared to larger organizations, and have a correspondingly smaller level of influence with their suppliers. This study examines underlying factors that help SME managers develop strategically sound alternatives that result in not only feasible purchasing options, but could also help them to attain sustainable competitive advantage.

Key Words: Supply Chain Management, Supplier Development Strategies, Factor Analysis, Structural Equation Modeling.

INTRODUCTION

Small and medium enterprises (SMEs) use market niches to gain a competitive advantage. These organizations rely on technology and superior quality to set them apart from the competition. Such strategies gain strength from the complexity inherent to niche markets. Small organizations often have to integrate with suppliers—capitalizing on complexities and focused development—to offset gains of leverage buying enjoyed by larger multi-national enterprises (MNEs). SMEs need to develop their purchasing practices to realize these types of strategic benefits. Therefore, complexity and development are the proposed determinants in this study that can be used by SMEs to capitalize on purchasing strategy to take gain strategic supplier leverage.

The continuous development of managerial skills is almost required 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 the dominant problems facing their business. According to their research, purchasing is one of those areas likely to become a separate specialized entity in larger MNEs due to the high levels of responsibility facing these managers. In the absence of such functional specialization, taking advantage of purchasing as a strategic opportunity is not always possible for managers at SMEs, who often have to "wear many hats."

USING PURCHASING STRATEGY IS COMPLEX

The complexity of buyer-supplier relationships has been evolutionary and increases in complexity 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, & Von Glinow, 1991). Theories for managing these relationships derive various elements from not only transactions cost analysis, but also organizational structure theory and the resource-based theory of the firm (Hoyt & Huq, 2000). The nature of managing the relationship is based on the level of risk associated with the transaction uncertainty, asset specificity, market competition, and the subsequent level of required governance (Dyer & Singh, 1998).

Purchasing development can be classified by the skill level required of purchasing personnel. Changing procurement leverage from transactional duties to strategic initiatives requires a different mix and a higher-level application of skill sets (Giunipero, 2000). A four-phase perspective of purchasing skill level development is generally accepted (Freeman & Cavinato, 1990).

Development of the purchasing function to a strategic level requires viewing key suppliers as extensions of the buying organization (Anderson & Katz, 1998). Utilizing suppliers as extensions of the company represents an integration that enables the accurate communication of information between organizations. This cuts down on supply chain volatility, reduces the bullwhip effect, and makes suppliers more responsive to changes in demand (Bagchi & Skjoett-Larsen, 2002). Integrated supply chains have multiple communication points, shared compatible databases, and transparent information systems.

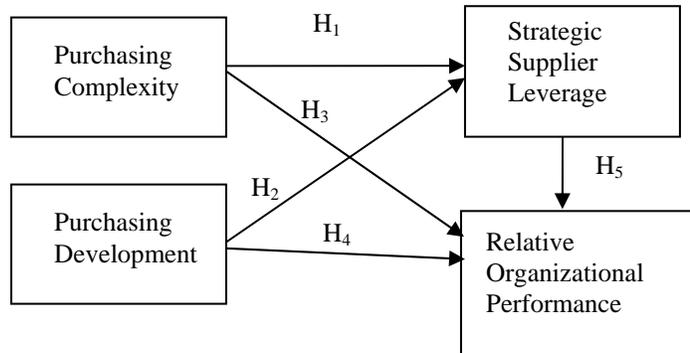
RESEARCH MODEL

A model which diagrams the relationship of purchasing complexity and the purchasing development within organizations is shown below in Figure 1. Purchasing complexity affects the ability of an organization to achieve strategic leverage with their suppliers. These factors may also affect the financial performance of an organization, so this aspect is evaluated in this study as well. Attributes which are under consideration for affecting purchasing complexity include: cost allocations, price and availability, technical complexity, supply availability, level of automation, risk and uncertainty, length and terms of the relationship, level of governance required, level of information exchange, and type of collaboration. The factors affecting the determinants of purchasing complexity and development are examined. These factors are hypothesized to have an effect on the ability of SMEs to leverage suppliers to improve the organization's competitive purchasing position (see Figure 1 below).

A highly-developed purchasing function is better positioned to leverage supplier value to gain competitive advantage. As a result of the ability of the purchasing function to leverage these strategic strengths, organizational financial performance should be

enhanced. The purchasing function is not able to respond to a complex technical environment when it does not have developed employee skillsets. Under these circumstances, a firm has less ability to leverage suppliers, capitalize on strategic initiatives, or achieve improved financial performance.

Figure 1: Research model for strategic supplier leverage.



Research Hypotheses

Contributing factors to purchasing development and purchasing complexity affect strategic supplier leverage and organizational performance. Relative organizational performance is measured with the respondent's perception of which profitability indicators are affected by the examined factors.

The first hypothesis of this paper proposes a link between purchasing development and the strategic supplier leverage of an organization. The resulting hypothesis is as follows:

H₁: *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 defining the complexity of the purchase function will in turn contribute toward improving the organizational performance (H_{3&5}).*

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

The second hypothesis of this paper proposes a link between purchasing development and the relative financial performance of an organization. The resulting hypothesis is as follows:

H₂: The purchasing development of an organization will also have a significant positive effect on leveraging suppliers. Those attributes that contribute toward defining the development of the purchase function will, in turn, contribute toward improving the financial performance of an organization (H_{4&5}).

This hypothesis guides the examination of the effect of managing those attributes that define an organization's purchasing development. This hypothesis is designed to study the effect that purchasing development has on improving the relative financial performance of an organization as assessed by the respondents.

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. It is, therefore, important that SMEs employ the purchasing function strategically to gain purchase leverage.

DATA COLLECTION

The researchers developed a mailing list of over 1500 sample SMEs within the four North American Industry Codes (NAICS) sub-sectors through ReferenceUSA. The subsectors include computer and electronic product manufacturing, as well as manufacturing that use electronic components in control systems, such as machine tools and transportation equipment manufacturing. Mailings were sent to non-respondents, and then the remaining non-respondents were contacted, resulting in an overall response rate of just under 15%.

ANALYSIS AND RESULTS

A factor analysis is used to identify item grouping, then employed structural equation modeling to analyze the data and to test the research model. Support for the hypotheses was given by the path coefficient and the statistical significance of the corresponding t value for the path.

Forty data items are used for the initial exploratory factor analysis. The factor analysis identified over 20 items that loaded on the determinants of the construct. 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 & Watkins, 1993).

The items that loaded on both the Purchasing Complexity and Purchasing Development determinants are listed in Table 1. 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 (TPC) orientation, designated as TPC items in Table 1; the other items grouped around the concept of utilizing suppliers as a resource, and are marked SR in Table 1.

Table 1: Factor loadings on the product complexity after a Varimax rotation.

Question	Factor Category ^a	Purchasing Complexity (PC)	Purchasing Development (PD)
Degree of (product) complexity	TPC	0.820	
Degree of change in (product) complexity	TPC	0.672	
Requirements of switching	TPC	0.822	
Supplier investment	TPC	0.974	
Developing supply chain strategies	TPC	0.944	
Establishing measurement criteria	SR	0.816	
Measures are used to evaluate purchasing performance	SR	0.984	
Long-term relations with suppliers	SR	0.908	
Suppliers integrated into process	SR	0.898	
Time spent on routine transactions	DTS		0.896
Availability	DSB		0.984
Substitutions	DSB		0.712
Influence of quality on purchased goods or services	DSB		0.720
Influence on productivity of purchased goods or services	DSB		0.787
Managerial skills	DHSS		0.881
Planning is an important part of purchasing	DHSS		0.902
Contract terms	DHSS		0.876

^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), developing the supply base (DSS), and developing the higher level strategic skills (DHLSS). The items loading specifically on the Purchasing Development determinant include the following: time spent on routine transactions, clerical skills, coordination with other departments, availability of supplies, substitutions, influence on purchased goods or services, managerial skills, planning, contract terms, and integrating purchasing strategy with overall strategy. These items all load onto the Purchasing Development determinant.

Structural Equation Model

The path coefficients for each of the hypothesized paths, except one, are shown to be significant to at least the 0.05 alpha level. The paths from the purchasing complexity determinant to strategic supplier leverage and to the relative organizational performance construct are the strongest p-values. The paths to the relative organizational performance from both purchasing complexity and purchasing development determinants have higher path coefficients (0.74 and 0.66 respectively). Table 2 shows the full results.

Table 2: Structural model path coefficients and t values for hypothesis testing.

Hypothesis	Path Coefficient	t Value
H1:	0.22	2.36 [*]
H2:	0.74	4.03 ^{**}
H3:	0.37	2.01 [*]
H4:	0.66	2.06 [*]
H5:	0.14	0.11

^{*} p < 0.05; ^{**} p < 0.01

The only path not showing significance is the path between the strategic supplier leverage construct and the relative organizational performance construct. Since the paths from the purchasing complexity and development determinants to the strategic supplier leverage and the relative organizational performance constructs are significant, this implies these constructs are not affected directly, but rather are affected indirectly through their determinants.

DISCUSSION

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 skill is required to develop the supply base. The development of these skills is linked to achieving strategic

supplier leverage, and these factors are linked to driving relative organizational financial performance improvement.

The research question proposes evaluating determinants of purchasing complexity and purchasing development and how they affect a company's ability to strategically leverage suppliers. This study provides evidence linking purchasing complexity and purchasing development to both strategically leveraging suppliers and affecting the organizational financial performance. 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 indicate that strategic supplier leverage is affected not only when purchase costs are reduced or minimized, but also when the total cost of the product is reduced or minimized. Respondents indicate that when lower pricing from the supplier leads to competitive advantage, then strategic supplier leverage is achieved through the purchasing process. This result exemplifies the notion that strategic supplier leverage is not just about reducing prices from suppliers, but leverage is achieved with help from other factors, including enhanced quality, that serve to drive lower purchase costs or lower total costs. While the results do not support a direct link between strategic supplier leverage and relative financial performance improvement, the factor analysis does support a link between strategic supplier leverage and sustaining a competitive advantage.

CONCLUSIONS

The results support the idea that purchasing complexity and the level of purchasing development affect the amount of strategic supplier leverage available. Furthermore, the results support the argument that relative organizational improvement is improved by raising the level of purchasing development and level of purchasing complexity. While the results of this study do not directly link strategic supplier leverage and relative organizational improvement, the study does support their indirect relationship through common factors of purchasing complexity and purchasing development.

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 provide factors for building decision criteria that allow managers to better formulate strategic plans 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 relationships and measures by which to gauge supplier performance, affects leveraging the supply base and improving performance.

REFERENCES

- Anderson, M., & Katz, P. (1998). Strategic sourcing. *The International Journal of Logistics Management*, 9, 1-13.
- Bagchi, P., & Skjoett-Larsen, T. (2002). Organizational integration in supply chains: A contingency approach. *Global Journal of Flexible Systems Management*, 3 (1), 1-10.
- Doktor, R., Tung, R.L., & Von Glinow, M.A. (1991). *Future directions for management theory development*. *Academy of Management Review*. 16, (2), 362-365.
- Dyer, J.H., & Singh, H. (1998). The relational view: cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*. 23, (4), 660-679.
- Elram, L.M. (1992). International purchasing alliances: an empirical study. *The International Journal of Logistics Management*. 3, (1), 23-36.
- Freeman, V., & Cavinato, J. (1990). Fitting purchasing to the strategic firm: Frameworks, processes, and values. *International Journal of Purchasing and Materials Management*. 6-10.
- Giunipero, L. (2000). *A skills-based analysis of the world-class purchaser*. Center for Advanced Purchasing Studies.
- Hanks, S., & Chandler, G. (1994). Patterns of functional specialization in emerging high tech firms. *Journal of Small Business Management*. April, 23-36.
- Hoyt, J., & Huq, F. (2000). From arms-length to collaborative relationships in the supply chain. *International Journal of Physical Distribution & Logistics Management*. 30, (9). 750-764.
- Pearson, J., & Ellram, L.M. (1995). Supplier selection and evaluation in small versus large electronics firms. *Journal of Small Business Management*. 28, 20-29.
- Portney, L., & Watkins, M. (1993). *Foundations of clinical research*. Norwalk, CT: Appleton & Lange, 543-544.