

Purchasing Strategies: Validating The New Measurement

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The objective of this study is to validate a new measure for Purchasing Strategies. A total of 158 questionnaires were used for statistical analysis in order to study the significant level of the model in manufacturing industry located in Malaysian major industrial zone. Four constructs bearing the concept of purchasing strategies (i.e. Effective Negotiation, Collaborative Relationship and Interaction, Effective Cost Management and Supply Base Management) were tested. Findings obtained from the factor analysis and reliability tests indicated that all the four dimensions are highly suited for measuring purchasing strategies, also proving that the instrument is applicable in the Malaysian culture. Through the correlation analysis, it was shown that purchasing strategies is furthermore associated with manufacturing performance.

Key words: Measurement Validation, Purchasing strategies, manufacturing performance and Malaysia

1.0 Introduction

Recent development on world economic climate creates uncertainty on business environment. Some analysis predicting the world is just at a doorstep of worst global economic turmoil which we had gone through during the period after World War I. This been added with United States openly declared that they are facing recession and announced stimulation package nearly USD 800 billion. In addition, various economic stimulation package declared by many countries around the world such as Malaysia with its RM 7 billion package and with more to follow to revive the economy. Thus, this creates a necessity for manufacturing firms to look into reconstruct, restructuring and enhance their strategy to sustain the business and profitability while remain competitive in marketplace. Manufacturing firms are in tremendous pressure to save their businesses while protecting the stake holder's interest.

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After the collapse of world's major financial institution, latest alarming news was on US automotives manufacturing industry giants namely General Motors, Chrysler and Ford called as 'Big Three' seeking USD 34 Billion financial bail out from The Congress. In addition, it is predicted there will be more firms in pipeline to come out with similar actions across the world whereby firm approach for government aids to bail out in order to sail through current challenging market condition. However, Malaysian base manufacturing firms are yet to face serious financial crisis as in other parts of the world. So far, the only reactive action been taken by manufacturing firms through reduction of their work force and up to January 2009 around 10,000 been laid off in Malaysia and more than 100,000 employees been laid off in US. Therefore, current crisis sends signal to manufacturing firms on the precaution and early proactive measurements to save guard their firms from plunge into huge losses which eventually will lead to bagging up to government financial support or worst case winding up their business.

As a result, remain competitive in current business environment will not be an easy path for business organization due to challenges need to be face by organization with stiff competition and complexity in marketplace. Exploration on all possible avenues becomes vital for manufacturing firms for surviving. Realized cost management being fundamental element in order for organization to remain profitable besides other elements such as superior quality, supply base development and innovative products. Manufacturing firms must focus to understand the element of their cost expenditure. In most of cases, manufacturing firms intend to emphasize more on their internal factor of cost element for sustaining and developing manufacturing performance.

As highlighted in most of purchasing studies, in general firm's expense through purchasing contributes over 50 per cent of its cost for requisite products and services (Rodriguez, Hemsworth, Lorente & Clavel, 2006; Spekman, Kamuff & Spear, 1999). This provides a clear guidance on manufacturing firms to focus on purchasing as a life line for sustaining the business. Furthermore, this involved very minimal investment as achievement relied on the skill of purchasing human resource. Unfortunately, most organization fails to recognize the importance and contribution of supply base management and purchasing which traditionally viewed as clerical stuff (Giunipero *et al.*, 2006). Therefore no attention given in linking purchasing and cooperate strategy. In order to overcome challenges in the context of sustaining and developing manufacturing performance, there are needs for organization to formulate and implement effective procurement strategies. As explain earlier, purchasing will contribute 50% to revenue on every dollar saving. As such, focus on purchasing strategies will provide guided path for value creation in manufacturing performance. Thus, the study aims to validate a new measure for Purchasing Strategies.

2.0 Literature Review

Recent study by Cousins *et al.*, (2006) on taxonomy of purchasing function analyzed firm's performance base on different clusters in purchasing function which creates different level of relationship according to the categorization. Strategic planning, internal integration, status of purchasing functions and purchasing skills been used to measure firm's performance outcomes in term of supplier integration, supplier relationship outcomes, production performance and financial performance (Cousins *et al.*, 2006). Strategic planning measures firm's tactical approach on purchasing

strategy via establishment of structural long term planning. This is done through re-examining of the strategic plan to bridge the gaps towards corporate strategy by incorporating the supply base development and supplier relationship. Cousins *et al.*, (2006) research revealed that all clusters grouped under strategic purchasing had significantly contributes towards higher level production performance except for celebrity purchasers.

Although the significant of strategic purchasing function been acknowledged, Benito (2007) stressed that few research been done on purchasing function contribution on business performance. On the other hand Benito (2007) also revealed that there is very limited analyzed done on the nature of purchasing capabilities and skills. The configuration of purchasing strategic and manufacturing performance is important but previous research more interested in linking macro level of purchasing function in supply chain towards business performance. Das and Narasimhan (2000), also supported that regardless of the significant contribution of purchasing competence, there are still huge portion of its function remain unexplored.

Therefore in another research, Benito (2007) examined the purchasing strategic integration role as moderator to create effect on the relationship between purchasing efficacy and business performance. In his research, purchasing efficacy been outlined through purchasing strategic objective which encompasses its competitive priorities such as cost, quality, flexibility and delivery. Configuration of purchasing function with business strategy is crucial rather than focusing on the execution of particular purchasing practices. Thus, this study narrow down the focus of purchasing strategies on the effect towards manufacturing strategic goals with purchasing strategic integration role as moderator.

2.1 Purchasing Strategies

A framework is proposed base on an organization conceptual approach to follow in strategizing the purchasing function in addressing the manufacturing performance. Contract agreement, long term strategic factors correlate to core competences, benchmarking, supplier partnership and interaction, value chain analysis as well as cost issues been framework as guideline for organization purchasing strategies. In addition, few other factors also been considered by manufacturing organization for strategic purchasing in order to drive and maintain the core competence of the firm. Some of these factors are such as delivery reliability, supplier finance stability and cash position, cost capability, technical capability been essential in firms buy decision which been translated in strategic position. Classic ways whereby firms base their procurement decision purely on cost issues alone have gone in the new strategic purchasing evolution. Those days the yields will only focus the lowest cost position and neglecting the core hidden factors mainly on quality and delivery. However, firms are now aware and awake that some suppliers play around with cost elements just to close the deal at that particular points and no promising business continuity plan after a deal been closed.

Basically, purchasing in a manufacturing firms make available quality raw materials, spare parts for machine and factory maintenance as well offer services for use in production daily operation of its business. Development of manufacturing sector recognized the importance for firms to engage effective purchasing strategies. Thus,

in order to strive through the competitive and dynamic business environment, purchasing strategies that focusing on formulating favorable business deal with suppliers through identification and development of competitive sources for high quality as well as low cost raw materials and spare parts plus excellent services is essential for world class manufacturing firms. As a result, this study employs four element of purchasing element which been developed by Kiser (1976) and later been modified by Janda and Seshadri (2001). Kiser (1976) study offer six purchasing strategies such as negotiation, developing and maintaining good relations with suppliers, sourcing, developing suppliers, protecting the cost structure of company and minimizing cost (Janda & Seshadri, 2001, p. 294). The present research adapted Kiser's model on purchasing strategies into four elements of purchasing strategies. Purchasing strategies in this study maintain effective negotiation and collaborative supplier relationships and interaction, while supply base management strategy subsumes the sourcing and developing suppliers in Kiser's purchasing strategy. The effective cost management includes Kiser's latter two strategies which is protecting the cost structure of company and minimizing cost.

2.1.1 Effective Negotiation

Basically, negotiation is a process involving two or more people of either equal or unequal power meeting to discuss shared or opposed interests in relation to a particular area of mutual concern. "*If you want to success in business...you have to learn how to negotiate*" quoted by Simon Hazeldine. As adopted from Porter's (1980) model by Mol (2003) bargaining power is the most apparent force associated to purchasing management. Firm's needs to find ways to compile resources to have more bargaining power with supplier as part of sustainable competitive advantage. Bargaining power with supplier been gained as part of negotiation skills in purchasing organization. According to Giunipero and Percy (2000), influencing and persuasion, understand business condition and customer focus are fundamental for negotiation process. Effective negotiation and communication able to foster good business relationship with supply chain partners.

2.1.2 Collaborative Relationship and Interaction

Building collaborative relationship with supplier is the key element in purchasing strategy. Supply chain relationship been explain by transaction cost theory, political economy theory, social exchange theory and resource dependency theory which contributed to fundamental study for behavioral dimensions of supply chain relationship (Fynes, Voss, & Burca, 2005; Su, Song, Li & Dang, 2008; Carr & Pearson, 1999). Mark (2004) referred supporting element of buyer-supplier collaboration as cultural element which made of trust, mutuality, information exchange, openness and communication. There was empirical study done by Golicic and Mentzer (2006) on examination of relationship magnitude. In their research, Golicic and Mentzer (2006) examined in detail how relationship magnitude in term of trust, commitment and dependence as independents variable contribute to relationship value. Relationship value had been identified as first step of quantifying measurement of relationship outcome.

2.1.3 Effective Cost Management

As highlighted by Janda and Seshadri (2001) every single percentage saving in purchasing cost can significantly contribute in saving half point in sales. This significant contribution in purchasing function required focus on total cost management as part of purchasing strategy influencing manufacturing performance. Zsidisin and Ellram (2001), identified that total cost of ownership is an important tool as a foundation for strategic cost management. In their research, they examined the cost management associate with supplier alliances in three dimensions which analyze total cost of ownership, understanding supplier cost and target costing. As a result, the paradigm shift in cost management has shifted focus from price to Total Cost of Ownership ensuring that purchasing strategies is driven by necessity for manufacturing operation. Total cost of ownership is crucial for buyer in order to analysis and assess the cost factors involved in acquisition, possession, utilize and subsequently disposition of a product or services (Ellram & Siferd, 1998) which ultimately will lead to firm's make or buy decision (Zsidisin & Ellram, 2001). Ellram (1995) in his study highlighted that total cost ownership interrelated with supplier relationship as this involved information sharing on factors that drives out cost. This will be the initial point for buyer to identify the gaps that need to be bridge in order to achieve the target cost which eventually will lead to minimize the production cost.

2.1.4 Supply Base Management

Basically, the important element in supply base management is determining the optimum number of supplier by purchasing for continuous improvement. Thus, organization should maintain right number of suppliers for effective management and development of its supply base. Monczka *et al.*, (2004) outline that supply base optimization will contribute in cost, quality, delivery and information sharing improvement between buyer and supplier. Supply base optimization will be a continuous process which identifies the best suppliers in terms of number and quality. Supply base optimization process also involve eliminating of non performance supplier which not capable to drive and achieve purchasing performance objective. Once purchasing completed the marginal supplier elimination process, they will continue to work on developing the good suppliers to better supplier. Purchasing responsibility to ensure supply base should be competent in undertaking additional assignment that contribute to performance improvement and in addition add value to buyer supplier relationship. Das and Narasimhan (2000) supported that supply base optimization is essential part of purchasing strategy which lead in minimizing the production costs and reduce transaction between buyer-supplier.

3.0 Research Design

The population of the study covers manufacturing firms throughout Malaysian industrial estate mainly Penang, Kedah, Perak and Selangor. It is important to highlight that Malaysia is one of important and prominent industrialize country in South East Asia which managed to attract many local from Small Medium Industries (SMI) development as well as foreign investors from all over the world mainly American, Japanese, European, Singaporean and Taiwanese. The problem statement lies on manufacturing performance which influence by purchasing strategies in an organization. The unit of analysis for this study is the purchasing

organization in manufacturing firm (represented by senior staff in purchasing organization). The reason for only selecting those with senior position in purchasing organization as they are well verse on the development and implementation of purchasing strategies by an organization compared to junior staffs whom more on execution.

3.1 Measurement of Variables

Nineteen items developed to represent purchasing strategies as independent variables adapted from Janda and Seshadri (2001); Kannan and Tan (2003); Wu, Chiag, Wu and Tu (2004); and some of the items been self constructed base on the needs of current purchasing strategic function and new dimension of strategic role in an organization.

4.0 Analysis

4.1 Profile of Organization and Respondent

The questionnaire was sent out to randomly select manufacturing organizations. In total 382 questionnaire been distributed through email and fax. Out of 382 questionnaires, around 158 questionnaire been returned. This shows response rate around 41% is still acceptable base on minimum requirement of sample size is one variable to ten respondents (Hair, Anderson, Tatham & Black, 2006). Most of the respondent from manufacturing organization are involved in producing electric and electronic products with 54.4% (86), followed by consumer products manufacturer consists of 15.2% (24), subsequently chemical and gases manufacturer comprises 14.6% (23) respondent. Meanwhile, other products manufacturer such as plastic injection molding, wafer fabrication, textiles, rubber products, paper and furniture products make up 14.6% (23). Only small portion of respondents consist of metal products manufacturer which make up 1.3% (2). Most of the company ownership owned by American 34.8% (55) in tag with United States role as the biggest investor and highest Malaysian export trade partner of made Malaysia products. Meanwhile, Japanese owned companies consist of 28.5% (45). This followed by European companies with 19.0% (30). Locally owned companies represents 8.90% (14) respondents, followed by our ASEAN trader partner Singaporean owned companies represents 5.10% (8), Taiwanese owned companies respondents 3.2% (5) and other countries 0.60% (1). In term of demographic, most of the respondents firm located in state of Penang with 45.60% (72) followed by Selangor 32.30% (51), Kedah 15.20% (24) and Perak 7.00% (11) respectively.

4.2 Goodness of Measures

The result as presented in Table 1 showed a four factor loadings with Eigenvalues greater than 1.0 for the independent variables with total variance explained was 73.07% of the total variance. A closer examination revealed that for factor 1 the total variance explained was 25.14%, followed by factor 2 it was 20.41%, factor 3 was 14.30% and finally in factor 4 it was 13.21%. KMO measure of the sampling adequacy was 0.86 indicating sufficient intercorrelations while the Barlett's Test of

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Sphericity was significant (Chi square = 7.5413, $p < 0.01$). In order to obtain this result, items with less than 0.5 from anti-image result correlation in the diagonal direction is excluded and factor analysis was performed again to ensure an acceptable level of measure of sampling adequacy is attained (Hair et al., 2006). The items that been excluded during this process are supply base management four and effective negotiation three.

Table 1
Rotated Component Matrix for Factor Influencing the Manufacturing Performance

	Factor			
	RI	CM	SBM	NG
Relationship and Interaction (RI)				
Feels our supplier as part of the business partner in this relationship (11)	<u>.916</u>	.141	-.079	.066
Present strategic information to suppliers (5)	<u>.911</u>	.169	-.152	.197
Involve in extensive formal and informal communication with suppliers (12)	<u>.897</u>	.153	-.147	.189
Treat suppliers as our customers (7)	<u>.889</u>	.150	-.068	.080
Retain the same supplier(s) for more than two years (1)	<u>.878</u>	.147	-.111	.166
Place orders on current supplier(s) for an item (2)	<u>.862</u>	.124	-.129	.156
Involve vendors in product improvement (6)	<u>.844</u>	.073	-.133	.167
Extend current contract(s) with suppliers (3)	<u>.837</u>	.106	-.009	.077
Knows the strength and weakness of our supplier (9)	<u>.826</u>	.036	-.160	.117
Let vendor access our technical and managerial know-how (4)	<u>.812</u>	.055	-.158	.134
Supplier willing to share confidential information (8)	<u>.802</u>	.120	-.015	.082
Perceives that our supplier is perfectly honest and truthful (10)	<u>.749</u>	.213	-.141	.087
Cost Management (CM)				
Reduce inventory level by engaging supplier with JIT, VMI & Consignment (7)	.172	<u>.947</u>	-.037	.099
Make or buy decision through cost measurement (10)	.172	<u>.945</u>	.000	.099
Monitor poor deliver performance by suppliers (8)	.145	<u>.918</u>	-.058	.105
Provide target costing for suppliers to be meet (3)	.167	<u>.894</u>	-.036	.083
Request suppliers to provide the cost breakdown to analyze the cost drivers (4)	.094	<u>.884</u>	-.015	.139
Control internally on Order processing costs (2)	.122	<u>.817</u>	-.055	.173
Minimize the storage and transportation cost (5)	.106	<u>.795</u>	-.037	.108
Monitor poor quality performance by suppliers (9)	.055	<u>.748</u>	.272	-.077
Measurement on Supplier's ability to eliminate waste as cost reduction (6)	.121	<u>.723</u>	-.143	.072
Control of suppliers' on price increases (1)	.110	<u>.720</u>	.193	.044
Supply Base Management (SBM)				
Involve suppliers' on the new product development (7)	-.150	.045	<u>.899</u>	.109
Devote time to improve suppliers' productivity (9)	-.146	.011	<u>.889</u>	.077
Prefer to purchase from single source (2)	-.119	-.018	<u>.808</u>	-.007
Provide training support to suppliers' as part of supplier development (6)	-.128	-.025	<u>.786</u>	.010

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Select qualified suppliers through standard supplier selection process (8)	-.106	-.077	<u>.784</u>	-.026
Avoid supplier dependence (5)	-.107	-.058	<u>.730</u>	.073
Deal many suppliers for the item (1)	-.126	.050	<u>.707</u>	.046
Purchase items from many suppliers in one location (3)	-.019	.093	<u>.655</u>	.067
Negotiation(NG)				
Seek for win-win outcome (5)	.147	.183	.108	<u>.902</u>
Spend longer time on negotiation process (8)	.176	.154	.083	<u>.846</u>
Reach mutual agreement on discussed issue (6)	.089	.011	.048	<u>.809</u>
Require bidders to provide cost data (4)	.303	.167	.023	<u>.779</u>
Powerful enough to ask supplier to readjust their pricing strategy (7)	.155	.310	.083	<u>.773</u>
Solicits ideas and suggestions (2)	.323	.119	.056	<u>.767</u>
Explore supplier oriented solutions (1)	.036	-.083	.001	<u>.744</u>
Eigenvalues	12.464	6.521	4.827	3.226
Total Variance (73.07%)	25.144	20.414	14.304	13.212
KMO	0.86			
Approximate Chi-Square	7.5413**			

Note: The statement number four in supply base management and number three in negotiation section were deleted due to low factor loading and high cross loading. These items will not included in further analysis

***p<0.01*

4.3 Reliability Analysis

The inter-item consistency reliability or the Cronbach's Alpha reliability coefficients of the variables were obtained. The range between 0 and 1 for Cronbach Alpha coefficients is reflecting the reliability of the data. A Cronbach Alpha coefficient is acceptable, if the value higher than 0.70 (Nunnally & Bernstein, 1994). On the other hand, Sekaran (2003) stated that a level of 0.60 is still acceptable. However, the values obtained for all the six variables were above 0.70 meets the standard requirement which is considered very reliable. The highest reliability scored by Collaborative Supplier Relationship at 0.97 Cronbach Alpha Value, while Supply Base Management scored the lowest reliability value at 0.92.

Table 2
Reliability coefficients for the major variables

Variables	Number of item	Item dropped	Cronbach's Alpha Value
Effective Negotiation	8	1	0.93
Supply Base Management	9	1	0.92
Collaborative Supplier Relationship and Interaction	12	-	0.97
Effective Cost Management	10	-	0.96

4.4 Descriptive Statistics

The variables were measured based on a six-point Likert scale. The mean and standard deviation of all the variables were summarized in Table 3. From the descriptive analysis results, it shown that mean of all six variables is rather higher than medium whereby all variables recorded mean range between 4.21 to 5.25. The highest mean been recorded at 5.25 by Supply Base Management as independent variable, meanwhile Collaborative Supplier Relationship and Interaction recorded lowest mean which is 4.21.

Table 3
Descriptive Analysis of Study Variables

Variables	Mean	Std. Deviation
Independent Variables		
Effective Negotiation	4.7342	.82049
Supply Base Management	5.2041	.59796
Collaborative Supplier Relationship and Interaction	4.1403	.93769
Effective Cost Management	4.9563	.66624

Notes : Independent items used a 6-point Likert scale with (1 = Strongly Disagree and 6 = Strongly Agree)

5.0 Discussion

The purpose of this research is to validate the dimensions for purchasing strategies. Questionnaires were being distributed to randomly selected manufacturing organization in four highly populated industrial states in Malaysia; Kedah, Penang, Perak and Selangor. The sample selected as such to reflect and study the influence of purchasing strategies towards manufacturing performance from local manufacturing firms up to Multi National Companies (MNC) in Malaysia. This research has actually set out to validate a new measure for purchasing strategies in the Malaysian business setting, predominantly in the context of MNCs. The findings obtained from the confirmatory factor analysis and reliability tests indicated that all the four dimensions of Effective Negotiation, Collaborative Relationship and Interaction, Effective Cost Management and Supply Base Management are highly suited for measuring purchasing strategies.

Traditional role of buyer who fill out purchase order, send out request for quotation (RFQ) and possessing paper work must be eliminated in the view of changing purchasing function into strategic approach. Purchasing professional need to be strategically align with firms cooperate and business strategic goal in gaining the knowledge about the company and industry future, obtain the best product and services, analyzing the cost drivers on effective total cost management by evaluating the rewards and risk associated in order for manufacturing performance excellence. Manufacturer able to managed to obtain optimal inventory levels and production

capacity in multiplant operation such as MNCs' which can maximize the use of working capital (Ndubisi *et al.*, 2005). In addition, building value added relationship both with external partners and internal units will be the influential for all strategic relationship goals. Cooperative communication, confidential information sharing and commitment in meeting firms request able to address the ability of the supplier to be a reliable partner.

5.1 Conclusion

Base on the study, the influence of four purchasing strategies (Effective Negotiation, Collaborative relationship and interaction, Effective Cost Management and Supply Base Management) are importance in creating positive impact on manufacturing performance competitive priorities consists of cost reduction, quality improvement, cycle time reduction, new product introduction timeline, delivery speed and dependability plus customization responsiveness.. In an increasing competitive business environment, purchasing strategic integration role as moderator is crucial in creating alignment between purchasing strategies and manufacturing performance in order to ensure purchasing function stayed in tag with strategic planning process and objective.

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