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SUPPLIER SELECTION CRITERIA IN THE CONTEXT OF CITY GOVERNMENT: EVIDENCE FROM RENOWNED ORGANIZATIONS OF KARACHI CITY

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ABSTRACT

Supplier selection is one of the most important elements of the procurement process which has the ability to influence the performance of the entire supply chain management. Thus, it is considered as one of the major factors in the supply chain strategy in multinational organizations. Contrarily, least attention is given to the subject by the companies originated in Pakistan. Lack of research in this domain is also impairing this issue. Regardless of the importance of the supplier selection subject, the state-owned companies in Pakistan, are specifically, paying least concern towards it. Thus, the purpose of this study is to identify the importance of different factors of supplier selection, by the state-owned enterprises working under the city government of Karachi. In order to simplify the model, researchers predominantly focused on the generic criteria for supplier selection and further included some other variables like HSSE/ ISO policies and flexible contract terms to the research model. Moreover, moderation has also been used in order to replicate the model effectively with the scenario of Karachi. After adoption of the generic model of supplier selection, Hayes model has been used for the analysis of data. The study findings reveal that the organization working under the City Government of Karachi have different criteria and preferences for supplier selection. Hence the research is pervasive in nature and can be adopted by policy makers and technocrats in order to improve the supplier selection process of state-owned enterprises.

***Keywords**: Supplier, Selection Criteria, State Owned Enterprises, Pakistan, Under-Developed Countries.*

INTRODUCTION

Supply chain management is considered as an underdeveloped segment in Pakistan. There has been least concern towards the criterion for the

selection of suppliers and on the development of a strategic alliance with them. Nevertheless, international firms with high repute and stature are more focused towards the issue (Rashid, 2014), as each business entity uses customized supply process regardless to the industry they belong to (Galinska & Bielecki, 2017). Ellram (1990), emphasized that in order to compete effectively, companies have to keep their inventory level low, thus selection of a reliable supplier is one of the most important elements of the business philosophy. This is further supported by Galinska and Bielecki (2017), accentuating that the supplier selection is one of the main components through which company operates, it also helps augment the financial upsurge as well as the market standings of the company.

According to Galinska and Bielecki (2017), there are several ways to evaluate the supplier companies, even many companies today extensively use multiple criteria for supplier evaluation. According to Mwikali and Kavale (2012), the process of supplier selection usually takes considerable time to evaluate the suppliers on several criteria such as the cost of raw material, cost of production, cost associated with quality assessment, personal facilities and organizational goals and others. Gahan and Mohanty (2011), postulated that there is a need for systematic evaluation of the suppliers', regardless of the organization type or industry to which a firm belongs to. Same has been supported by Mutai and Okello (2016), emphasizing that the choice of the supplier should be backed by a structured evaluation of all the potential suppliers. Hibadullah et al. (2014), further clarified the importance of supplier selection by highlighting that the companies must evaluate the supplier performance and place subsequent orders only on the basis of their level of performance.

Procurement in Public Sector Organizations

Erridge (2007), claim that public procurement faces a tradeoff between public interest and logic, where favouring logic can yield most economical advantages, but decisions regarding public procurement are often subject to different political, administrative and regularity objectives (Schapper, Veiga & Gilbert, 2006). Regardless of the level in which the supply chain management process is undertaken, it is one of the most potent factors which can considerably enhance a company's performance (Rashid, 2014).

Abbasi, Sheikh, and Hassan (2015), specified numerous qualitative and quantitative studies to identify the criteria as well as the impact of each criterion used on the firm's performance. Although according to Ittner, Larcker, Nagar, and Rajan (1999), generally, price and cost per unit is

treated as the most suitable criteria for the selection of suppliers, focus on these measures forces the organizations to compromise on quality, which decreases the reliability of purchase and increases the frequency of losses due to delays and miscommunication (Degraeve & Roodhooft, 1999).

Moreover, Rashid (2014) defends the irrational criteria highlighted by Ittner et al. (1999), that to achieve cost-effectiveness in supply chain management, firms prefer price and cost per unit as a yardstick for supplier selection. Findings become complex when impaired with the illustrations of Shiati, Kibet, and Musiega (2014), who emphasized that the multinational firms are somehow more concentrated towards the selection of their suppliers than the regional or national organizations. Subsequently, in the state-owned enterprises, there is no set of attributes for selection of suppliers. It has been observed that there is a dearth of research work linked to the supplier evaluation methods by the state-owned enterprises (Shiati et al., 2014), especially in developing countries like Pakistan (Abbasi et al., 2015). Furthermore, there is a considerable research work available on public procurement (Arshad, 2017), but a minimal evidence is available from the territories of Pakistan, regardless of the indication that dynamics of doing business in emerging economies are different from the developed economies (Singh, Garg, & Deshmukh, 2010; Lynn, 2006).

This research is predominant in providing the base for conducting further research work associated with the optimization of supplier selection process not only in Pakistan but also in other developing countries. Moreover, this research could be a helpful tool for the suppliers to self-assess the set of criteria which is preferred by the state-owned enterprises. Thus, it is optimal to state that the significance of this research has many folds, and this is not only beneficial for the managers and intrapreneurs operating in the state-owned enterprises but also for the suppliers who are in hunt of further business contracts.

THEORETICAL FRAMEWORK

There are more than seventy-five (75) criterion' which can be used to evaluate the suppliers for an organization. These criteria are termed as generic and implemented across the industries as well as in the context of purchase (Ho, Xu, & Dey, 2010; De Boer, Labro, & Morlacchi, 2001; Weber, Current, & Benton, 1991). These criteria (Figure 1) are adapted from Kar (2014); and Kumar Kar & Pani (2014). Kar (2014), indicated that in recent times researchers and practitioners are forced to select the most appropriate set of criteria for supplier selection, which might look generic in nature but suit best to the objectives and

priorities of the company. Study of Obed and Vincent (2014), specified three major criterions for the selection of suppliers i.e. a) Cost of raw material; b) Commitment to provide quality raw material; and c) Flexibility of the contract terms. Similarly, Shiati et al. (2014), presented the generalized framework for the selection of suppliers which include price; delivery; quality; production capacity and location.

Although the most recent criteria which are applicable generically, has been proposed by Żak and Galińska (2017), asserting that the product cost; cost of product delivered; reliability of the delivery; quality of the delivery service and product delivered; quick response (order fulfillment time); timeliness of delivery; market position, image and experience of supplier; economic efficiency of supplier; availability of supplier/ accessibility to the delivery system; and the quality and suitability of delivery fleet are the major benchmarks to be considered for supplier selection. This criterion is also supported by Galinska and Bielecki (2017), endorsing that these are the most adopted yardsticks for the evaluation of suppliers.

SNAPSHOT OF DIFFERENT VENDOR EVALUATION CRITERIA USED ACROSS LITERATURE		
Product quality	Delivery reliability	Warranties
Exporting status	Packaging capability	Intellectual Property rights
Product pricing	Production capability	Technical capability
Management capability	Vendor reputation	Financial position
Labor relations	Service quality experience	Past business records
Reciprocal arrangements	Cultural fitment	Communication barriers
Inventory position	Electronic data interchange	Value-added productivity
Geographical distance	Foreign exchange rates	Trade tariffs
Acceptable parts per million	Service design	Order acknowledgements
Trade restrictions	Buyer's commitment	E-Transaction capability
Documentation	Design capability	Supply variety
Rejection rate during inspection	Dollar value of performance	Purchase order stability
Lead time	Indirect costs	Response flexibility
Innovation	Facility planning	Safety adherence
Domain experience	Exporting status	Conflict resolution systems
Customs duties	Product line diversity	Intimacy of relationships
Quality management	IT standards	Cost reduction capability
Electrical capacity	Judgment	Response time
Total cost of acquisition	Risk perception	Certification and standards
Research and development	Organizational culture	Availability of parts
Sub-component pricing	Regulatory compliance	Self-audits
Rejection from customers	Education level of personnel	Receiving inspection
Billing accuracy	Cost reduction performance	Indirect costs
Data administration	Improvement commitment	Procedural compliance
Service quality credence	Vendor's commitment	Skill level of staff

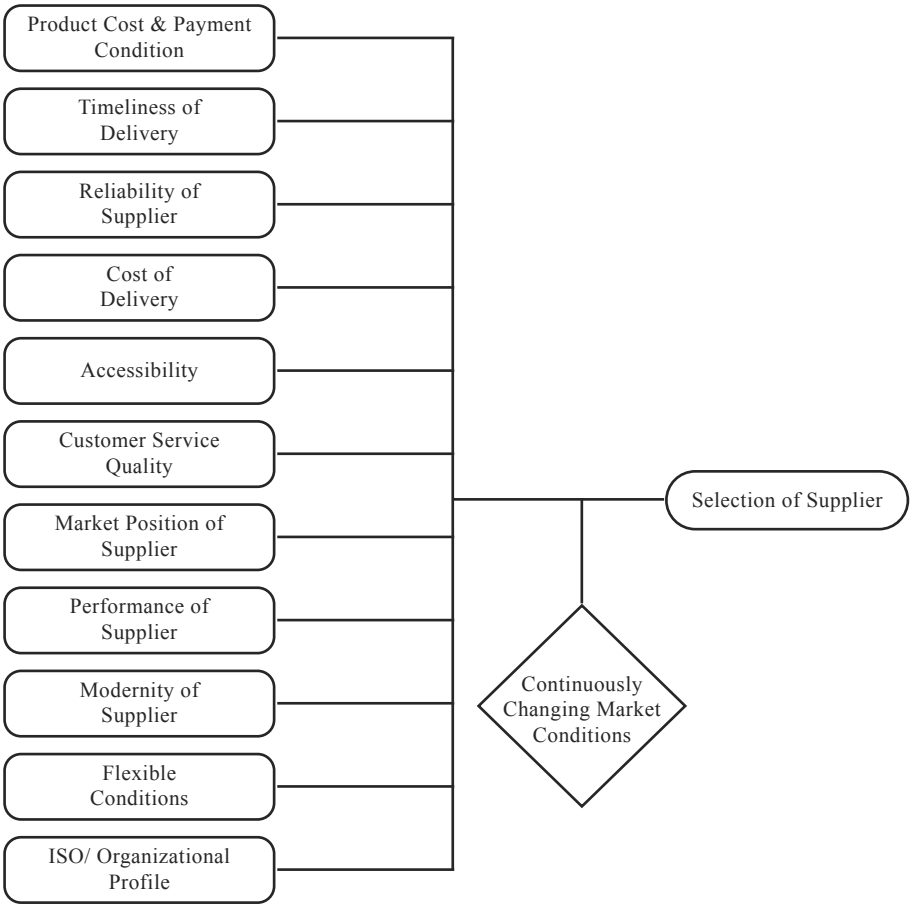
Figure 1. Various Criterions highlighted by Weber et al. (1991), adopted from (Kumar Kar & Pani, 2014).

No.	Major aspects of Suppliers' Evaluation and Selection	Generic Logistics Standard of "7 Rights"	Case Study 1 – Evaluation of LSPs	Case Study 2 – Evaluation of Meat Suppliers
1	Cost of Delivery	Right Cost	Transportation Cost	Cost of Delivery. Financial Conditions
2	Cost of the Product Delivered	Right Cost	(-)	Unit Price of the Meat.
3.	Reliability of Delivery	Right Product. Right Quantity. Right Place.	(-)	Accuracy of Order Fulfilment (No. of Claims/ Month) Risk of Delivery / Exposure to Danger.
4.	Quality of the Delivery Service and the Product Delivered	Right Condition. Right Customer.	Service Complexity and Flexibility. Quality of Human Resources	Flexibility of Supplier. Quality of the Raw Material.
5.	Quick Response. Order Fulfilment Time	Right Time	Delivery Time	Frequency of Delivery.
6.	Timeliness of Deliveries	Right Time	(-)	Timeliness of Deliveries
7.	Market Position, Image, Experience of the Supplier	(-)	Market Experience; Market Share	(-)
8.	Economic Efficiency of the Supplier.	(-)	Fixed Assets Turnover. Sales/ Employee.	(-)
9.	Availability of Supplier. Accessibility to the Delivery System	(-)	Service Complexity and Availability	(-)
10.	Quality and Suitability of the Delivery	Fleet Right Condition	Fleet Quality and Suitability	Quality and Modernity of the Fleet

*Figure 2. Supplier Evaluation Criteria adopted from (*Żak*, 2015).*

RESEARCH MODEL

For the study, generic framework of supplier evaluation and selection proposed by Żak and Galińska (2017), has been adopted which indicates product cost; delivery cost; timeliness of the delivery; and supplier profile/ performance of supplier as the independent variables. Furthermore, to develop a comprehensive research model; flexibility of contract terms (Gahan & Mohanty, 2011; Huang & Keskar, 2007); and the Health Safety, Security, and Environmental Policies (HSSE) (Rashid, 2014), are also taken as independent variables; as these are highlighted as potent variables by Obed and Vincent (2014). Moreover, the pressure of continuous change in market conditions (Mwikali & Kavale, 2012), is taken as the moderating variable in the research model.



Research Model

RESEARCH QUESTION

What are the various criterion which are use by the state owned enterprises (working under the City Government) for the selection of supplier?

LITERATURE REVIEW

Supplier relationship management is treated as one of the most important aspects of the supply chain management, which affects entire supply chain activities and organizational performance (So & Sun, 2010; Terpend, Tyler, Krause, & Handfield, 2008). Thus, selection of the supplier is also termed as one of the most important and multi-faced activity (Wilhelm, 2011; Lazzarini, Chaddad, & Cook, 2001). Selection of the most appropriate supplier results in mitigation of risk, increase in overall firm's performance and fosters a sound connection between the suppliers and the firm. The process might become fast

and easy to handle if the company sets particular criteria for the selection of its supplier(s). Hence, the process is dependent upon the development and selection of a series of criteria for the selection of an optimal supplier (Abbasi et al., 2015).

Subsequently, companies must out weight each criterion separately in order to individually examine its impact on firm's performance in order to develop the final set of its criteria for suppliers' selection (Yahya & Kingsman, 1999). Abbasi et al. (2015), also underlined that companies are involved in process of supplier selection since a long time and now they must shift their focus from selection of supplier to selection of most appropriate supply partner for a long-term association and healthy relationship. Hence, systematic literature has been developed which will highlight different criterion incorporated in the model of research shown above.

Product Cost

Garfamy (2011), implied that the cost is an important factor in supplier selection. Van Weele (2010), suggested that for any sort of supplier selection, one of the important tasks is to choose the most appropriate supplier who can provide the right amount of material at right time, within an acceptable range of price. In order to increase a firm's productivity, it is always preferred to opt for low-cost supply, as it can be linked with the minimization of the production cost (Mwikali & Kavale, 2012). On the other hand, Bhutta and Huq (2002) emphasized on the role of price and highlighted that price is one of the prime factors in the context of organizational buying along with the other factors like quality, service and delivery. Study of Hartley, Duplaga, and Lane (2005), also pinpointed the importance of price in the process of supplier selection and indicated that lower level of prices associated supplier is linked with the improvement of the purchase process.

Sim, Omar, Chee, and Gan (2010), conducted a survey on the manufacturing industry of Malaysia and ranked the cost, quality, and delivery as main components for the supplier selection. Similarly, a survey by Abbasi et al. (2015), from the automobile industry of Pakistan reflected that cost should be considered in the second position in the selection of the suppliers. On the contrary, Pearson and Ellram (1995), pointed out that for the small and medium-sized enterprises, achievement of low pricing is the major objectives in supplier selection and retention process, as the SMEs have limited investment resources.

Cost of Delivery/ Distribution

Mwikali and Kavale (2012), asserted that the companies must keep the delivery costs into account which will incur for the delivery of the supplies. Furthermore, Beamon (1999), stipulated that the consideration of price as well

as the cost of distribution must be included in the criteria of supplier selection. A similar indication is found in the research by Wilson and Collier (2000), which postulated that the selection of the supplier must be based upon the delivery rate of the raw material. This is also elaborated in the model proposed by Palaka, Erlebacher, and Kropp (1998), which indicate the consideration of direct variable costs, congestion cost or work-in-process inventory holding cost, and lateness penalty costs for the make-to-order system.

Reliability of Delivery

Vonderembse and Tracey (1999), postulated that continuous evaluation of suppliers must be an essential part of the supplier selection process. The assessment is required in order to ensure the timely availability of raw materials. Research further particularized that supplier monitoring is also required in order to renew order to the most suitable supplier. This is also useful when a company has multiple suppliers for any particular order and through this practice, alternative supplier(s) might also be selected at the time of need.

Research of Ernst, Kamrad and Ord (2007), further highlighted that unreliability of suppliers might result in an intensification of supply chain risks. Thus, it is better to believe that the reliability of suppliers is one of the most important variables for the selection and preference of the suppliers (Mukherjee, 2016). These findings are supported by Yang (2016), who highlighted that the criteria for loose selection of supplier should be at least seventy percent, that might be raised up to ninety percent for strict evaluation. On the other hand, Nurdiyana et al. (2016), implied that best delivery performance can be gauged through order fulfilment rate, the percentage of late delivery, lead-time, and location, type of transportation, shipping packaging standards and delivery of products in good condition.

Quality of Delivery Service and Product Delivered

One of the most initial works on the topic of supplier selection emphasized quality as the highest ranked criterion (Dickson, 1966). Cheraghi, Dadashzadeh and Subramaniam (2004), proposed that the quality is the variable whose impact lasts longer than price and delivery, hence it is treated as the topmost criterion for the selection of the supplier. Research even treats this criterion as the major source behind the development of a long-term relationship between companies and suppliers (Rashid, 2014).

According to Nurdiyana et al. (2016), quality can simply be defined as the degree in which customer requirements are met. In order to examine the quality, organizations must examine the percentage of rejection of parts

supplied by different suppliers. Shiati et al. (2014), stressed that the inadequate quality dimensions result in the rejection rate and also predicts the probability of a defect in the upcoming supply of products.

Timeliness of the Delivery

Żak (2015), pointed out that delivery deadline is one of the prime factors in the selection of the supplier(s) and is one of the threshold criteria. Delay in delivery leads to a delay in production and hence ultimately result in a decrease of overall satisfaction level of the customers (Vonderembse & Tracey, 1999).

Mwikali and Kavale (2012), established that the lead time is the terminology to define the time between the order placement and delivery of the material to the company. This means that the supplier rating will tend to be higher if the lead time is shorter. Moreover, the study of Beamon (1999), asserted that higher lead time prompts that the supplier is trying to serve more customers than its capacity to serve. Moreover, the study of Ray and Jewkes (2004) also described that the price cannot be determined individually, but the length of delivery must be considered. Thus, it is legitimate to state that improvement in the delivery time is the area of key concern for supply chain managers which will optimize the performance of delivery process (Forslund, Jonsson & Mattsson, 2008).

Cheraghi et al. (2004), compared and analyzed a number of research papers on supplier selection from 1966 to 1990 and from 1990 to 2001, and indicated timeliness in delivery as the second most important factor in the selection process of suppliers. The same research also stressed that the quality as the foremost factor which held its position even under the span of thirty-six years. Furthermore, the research study conducted by Imeri (2013), provided numeric weights to the associated factors in order to highlight their importance in the selection of supplier and mentioned that the delivery of supplies is an imperative factor. Similarly, Prasad, Kamath, Barkur, and Nayak (2016), also articulated the importance of timeliness of delivery in the context of the steel pipe industry.

Supplier Profile/ History of the Supplier

Evaluation of the supplier's financial condition should be considered as one of the prime factors in the pre-screening process for selecting a supplier (Handfield, Blackhurst, Elkins, & Craighead, 2007). In this regard, Awino (2002), postulated that the suppliers must have a strong financial background to support their operational activities. Further, to minimize the delays in payments, suppliers' financial abilities must be considered important in the entire procurement process (Danese, 2013).

Mutai and Okello (2016), indicated that there is a high level of relationship between supplier's financials and ability to deliver on time, which ultimately enhances the performance of the entire procurement process.

Moreover, the research study presented by Cheraghi et al. (2004), indicated that the suppliers with unstable financial background are not able to contribute effectively towards a strategic partnership. The study further revealed that factors related to the level of trust such as the outlook for the future; compatibility across the functions of buyers and supplier firms; and the supplier's organizational structure should also be included in the supplier selection profile. Although these factors are intangible in nature and so difficult to rate, however, are very important to evaluate the suppliers, as they formulate predictive intuitions about the organization and suppliers' long-term associations (Cheraghi et al., 2014).

Mwikali and Kavale (2012), emphasized the relative experience of the supplier in the selection criteria. For the evaluation of the relative experience of suppliers, monitoring of past production; schedule; response to the market; and its ability to make commercial relations, are considered. Furthermore, the customer base is also included in the list of factors optimizing the supplier's profile.

Availability of Supplier/Accessibility to the Delivery System

In the process of supplier selection, authorities must also evaluate potential supplier on the basis of the ease of communication (Baily, Farmer, & Jessop, 2005). MB Schertzer, Schertzer, and Robert Dwyer (2013), indicated that conveying recommendations to the stakeholders require empathy, commitment and clarity. Thus, it is optimal to believe Hallikas Kulha and Lintukangas (2013), that that there must be a systematic mechanism of communication and interaction between primary stakeholders included in the process of purchase. These findings are further clarified by Smith (2014), who indicated that purchasing organization must prefer those vendors who are willing to be in the process of continuous communication. Research further clarified that two-way communication results in the formation of mutual understanding & also diminishes the perceived risk.

Quality and Suitability of Delivery Fleet/ Modernity of Suppliers

Roy, Sivakumar, and Wilkinson (2004), stated that the ability of a supplier to provide technologically sound product, ability to assist in product development, and capability to cope up with the change of technology, are the determinants which prove the capability of suppliers to provide strategic inputs to the buying firms. A similar annotation has

been highlighted by Cheraghi et al. (2004), that the rapid change in technology is the basic concern due to which supplier's technical capabilities should be included in decision criteria for the selection of suppliers. The study also highlighted that buyers are also concerned about the level of technology and the future capabilities of their suppliers.

Thus, it is ideal to indicate that the innovativeness capability of the supplier can be assessed by the supplier's ability to forward items from the product development stage to the production stage. Moreover, the ability to cope up with the pace of changing technology in order to foster the new product development is also an important element for organizational buying (Cheraghi et al., 2004). Similar findings are proclaimed by Danese (2013), that the supplier selection is based upon two criteria and that the technical expertise is one of them. Study of Mwikali and Kavale (2012), specified that technical expertise of suppliers is especially important when a firm wants to include new products into its list of offerings or is trying to embrace the latest level of technology.

Flexibility of Contract Conditions

Shahadat (2003), professed three important factors for the selection of suppliers and emphasized that the flexibility on the payment terms is an important factor amongst them. Upton (1994), indicated that the flexibility of contract terms is required to deal effectively with uncertainties of the business environment and that the company can cope up with uncertainties, disruption, product life cycles, and consumption patterns (Swafford, Ghosh, & Murthy, 2006).

Furthermore, Tsay and Lovejoy (1999), studied the flexible nature of supply contracts which address the risk-sharing more practically. Similarly, Obed and Vincent (2014), concluded that there is a direct relationship between the flexibility of contract and the quality of raw material supplied, and further ascertained that the introduction of new products and customization also influences the selection of suppliers.

Health Safety Security and Environmental Policies (HSSE)

Socially responsible practices are now implemented throughout the supply chain process in order to deal effectively with an increased level of societal concerns (Gahan & Mohanty, 2011). Huang and Keskar (2007), identified that the contemporary supply chain is now equally focused on the company, customers, as well as towards the safety awareness and environmental attributes of suppliers. Therefore, it is a common belief that more sustainable business practices are

resultant of profitability, safety and societal concerns (Gahan & Mohanty, 2011).

Similar sort of findings has been implied by Thiruchelvam and Tookey (2011), that practices associated with the occupational health and safety are important, as they help in incident avoidance during the process of deliverance and installation of supplies. Moreover, CIPS (2013), also revealed that buyers must consider the linkage of supplier working criteria with ISO standards and evaluate the age of their equipment and production experience documentation.

RESEARCH DESIGN

This research has been linked with the research work of Saunders, Lewis and Thornhill (2009), in order to develop pervasive and applicative research in the context of Pakistan. The philosophy of research is epistemology as the entire focus of the study is towards knowledge building. This research has been compiled through collecting data from various research studies from the international context to complement with the context of Pakistan (Charmaz, 2006). As it is based on a collection of facts, therefore according to the research onion Saunders et al. (2009), the philosophical stance indulged in the study is realism. Moreover, as per Naibor (2018), when the data collection is based upon several firms then descriptive research method must be used, thus, the method of conducting and compiling the research is deductive in nature.

Furthermore, the research strategy is experimental and mono-method has been selected for the collection of the data, through having the responses at the convenience of the respondents. Accordingly, the nature of the experiment is a field experiment and study setting is non-contrived.

Sampling

In accordance to the research studies conducted by Mutai and Okello (2016); Mathiyalagan, Punniyamoorthy, and Sudhakar (2009); and Mugenda (2003), the type of sampling indulged in this research is probability sampling and the simple random sampling method is used. As in the state-owned companies of Pakistan, procurement is conducted only by one or few departments, there is no need of dividing the population into strata. Moreover, in order to make research optimal, the sample size for the research is two hundred.

Questionnaire and Research Tools

Items of the questionnaire have been adopted from the research studies by

Mathiyalagan et al. (2009); and Kannan and Choon Tan (2006). Moreover, previously regression has been used by some researchers as the method of analysis for the criteria of supplier selection, but regression is not able to trace the relative importance of each criterion used in the model (Kumar Kar & Pani, 2014; Tarofder & Haque, 2007). According to Kumar Kar and Pani (2014), the regression model is less effective to accommodate human subjectivity and preference. Moreover, when there is just one moderating variable in the research then it is appropriate to apply the Hayes (2013) model, for the purpose of analysis.

Statistical Testing and Analysis

Initially, Cronbach Alpha (α) has been used to check the reliability of the data, as the research instrument (questionnaire) is based on the Likert scale. According to McMillan and Schumacher (2006), the Cronbach Alpha (α) is used because it is treated as the most appropriate tool to trace out the reliability, especially when the respondents have to select from a variety of response variables. The levels of reliabilities for each item included in the instrument can be seen in table 1.

Table 1. Reliability of Data for Variables associated with the Supplier Selection

Variables	Reliability	Items
Product Cost	0.769	5
Cost of Delivery	0.824	5
Timeliness of Delivery	0.824	5
Quality of Delivery Service and Product Delivered	0.811	5
Timeliness OF Delivery	0.870	5
Availability/ Accessibility of Supplier	0.756	5
Quality and Suitability of Delivery Fleet/ Modernity of Suppliers	0.832	5
Flexible Contract Terms	0.766	5
Health Safety Security and Environmental Policies (HSSE)	0.835	5
Continuous Change in Market Conditions	0.847	5

Analysis

Findings of the tool indicated that all the variables used in the research have more than 75% of reliability in each case. Hence, in association to the explication by Pietersen and Maree (2007), it is appropriate to treat the data reliable, if the value of Cronbach Alpha (α) is equal to or greater than 0.7, in order to figure out reliable results. Therefore, as per the suggested research methodology, Hayes model has been implemented, to evaluate the impact of independent and moderating variables used in the research. These analyses can be seen in Table 2.

Table 2. Highlighting the impact of Hayes Model on the variables

```
Run MATRIX procedure
************* PROCESS Procedure for SPSS Release 2.16.3 *****************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3
**************************************************************************
Model = 1
    Y = Supplier Select
    X = P_Cost
    M = Continuous
Statistical Controls:
CONTROL= Product_C Cost_of_D Qual Timeline Supp Prof Availab Modernit Flexity
ISO
Sample size
       200
--------------------------------------------------------------------------

Outcome: Timeline

Model Summary
          R       R-sq        MSE          F          df1          df2          p
      .9736      .9481      .0586  2645.2997    11.0000  1588.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     -.2687      .1907    -1.4094     .1589     -.6427      .1053
Continuous   -.1597      .0179    -8.9449     .0000     -.1948     -.1247
Product_C     .9551      .0344    27.7508     .0000      .8876     1.0226
int_1         .0234      .0089     2.6214     .0001      .0139      .0408
Cost_of_D     .2593      .0164    15.8408     .0000      .2272      .2914
Qual          .0627      .0263     2.3186     .0267      .0073      .1182
Timeline      -.0007     .0241     -.0309     .9754     -.0480      .0465
Supp Prof     .1990      .0403     4.9392     .0000      .1200      .2781
Availab       .1166      .0125     9.3442     .0000      .0921      .1411
Modernit     -.2269      .0405    -5.6079     .0000     -.3063     -.1476
Flexity       .1394      .0133    10.4665     .0000      .1132      .1655
ISO          -.1100      .0305    -3.6086     .0003     -.1797     -.0509

Product terms key:
 int_1    Product_C     X      Continuous
R-square increase due to interaction(s):
         R2-chng          F         df1         df2          p
int_1      .0005     15.9312      1.0000   1588.0000      .0001
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
   Economic      Effect          se           t           p        LLCI       ULCI
     2.0186      1.0103      .0320     31.5866      .0000      .9476     1.0731
     3.0150      1.0376      .0329     31.5024      .0000      .9730     1.1022
     4.0114      1.0649      .0352     30.2392      .0000      .9958     1.1340
Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.
***************** ANALYSIS NOTES AND WARNINGS ************************
Level of confidence for all confidence intervals in output:
    95.00
                        ------ END MATRIX -----
```

Analysis

Table 2. indicates that there is a negative impact of the continuous change in the market conditions; and modernity of supplier and HSSE/ ISO policies, on the supplier selection of organizations controlled by the city government. Similarly, there is no impact of timeliness of delivery on supplier selection in these organizations. Findings also indicate that when

the moderating variable is linked with the independent variables, it demonstrates a significant impact. Thus, the continuous change in the market conditions, in association with other independent variables, affect supplier selection criteria more critically. This validates that the organizations controlled by the city government of Karachi tend to focus more on all the independent variables (mentioned in Table 1 & 2) when there is a change in the economic condition of the country.

CONCLUSION AND MANAGERIAL IMPLICATIONS

The findings of the research are completely coherent with the indication of Rashid (2014), that the continuous change in the market conditions is one of the moderating variables in the selection criteria of the supplier. It has been proved that the continuous change in the market conditions fosters more focus on the selection criteria of organizations controlled by the city government. But the findings of the study are relatively different from the prior studies, as they indicate no importance of timeliness in the selection criteria for the organizations controlled by city government. Similarly, there is also a negative impact of quality of fleet/ modernity of supplier and HSSE/ISO policies on the selection of suppliers.

Although timeliness of delivery has been treated as one of the potent variables by various studies (Prasad et al., 2016; Imeri, 2013; Forslund et al., 2008; Vonderembse &Tracey, 1999), but the study findings prove the least significance of the variable. This is an alarming condition, which indicates that for the government-controlled organizations, timeliness of the delivery does not have much importance, unlike the privately owned companies, as they are less focused on customer satisfaction. Thus, the government-controlled organizations pay the least attention to timely delivery which selecting the suppliers.

Additionally, quality of fleet/ modernity of supplier is treated as one of the potent variables by Cheraghi et al. (2004), but in the context of Pakistan, the variable negatively affects the selection criteria of the organizations controlled by the city government. This might imply that the supplier offering high-quality supplies are perceived to be expensive, thus a shortage of budgets to the state-owned companies might force them to surrender the requirement of the best quality for the selection of the supplier.

HSSE/ISO accreditations are considered important by the studies of Rashid (2014); Gahan and Mohanty (2011); Huang and Keskar (2007);

and Shahadat (2003), but here organizations controlled by the city government are negatively affected by these criteria, as their selection of supplier is negatively associated with the HSSE/ ISO accreditation. This might imply that the suppliers having high accreditation of HSSE/ISO are perceived as expensive and the state-owned organizations do not have optimal funds, neither they are much focused towards the societal concerns. Thus, their selection criteria of the supplier differ in comparison to the organizations of the developed world or the privately owned enterprises.

AREA FOR FUTURE RESEARCH

This research has been conducted on the organizations controlled by the city government, as though the importance of city-level government highlighted by Mawhood (1993); and Wraith (1972), but in countries like Pakistan there are several other forms of organizations which are controlled by provincial and national governments and study of those organizations may further enhance the level of understanding on this topic. Similarly, comparison of the selection criteria for suppliers followed by the city level, provincial level, and state level organizations might foster the degree of understanding and contribute significantly towards the body of research.

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