

## Improving Procurement through Technology: An Evidence from IT Sector of Pakistan

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### Abstract

*The aim of this study is to examine the influence of e-evaluation, e-sourcing, e-negotiation and e-design, components of e-procurement affecting organization performance in IT industry of Pakistan, since IT industry is growing rapidly in Pakistan. This paper undertaken quantitative approach and questionnaire was adopted from existing literature. To collect primary data a self-administered survey was conducted using convenient sampling and the research modal was tested empirically by using a sample of 400 questionnaires, collected online and manually from supply chain or procurement experts. Correlation was applied to find out the relationship among variables and regression was applied to find out the impact of (independent variables) e-sourcing, e-evaluation, e-negotiation and e-design (on dependent variable) organization performance. The results indicate that e-sourcing and e-negotiation have moderately high correlation with organization performance and e-evaluation and e-design have moderate relationship with organization performance. All the independent variables e-sourcing, e-evaluation, e-negotiation and e-design have statistically significant impact on organization performance. The findings of this research will supply chain managers in improving organization performance of IT sector.*

**Keywords:** e-sourcing, e-evaluation, e-negotiation and e-design

## **1. Introduction**

### **1.1 Background of the Study**

In terms of doing business, organizations face so many changes after the entrance of internet. Companies faced remarkable variations after introducing internet in operation and procurement department. (Nelson, 2001) stated after some manifest that Technological advancement of Information have been completely change the means of operations in private and government organizations. He added further, many organizations are investing in electronic procurement and information technology. In the era of technology, E-procurement plays very important role for both government and enterprises. Both private and public sectors are working for the cost reduction process and profit maximization. On the other hand, acceptance of electronic commerce has to do with although the moment for improvement seem to burgeon for both public and private sector (Zheng, 2004). Electronic procurement process is the major revolutionized technological advancement which also transfigure business. Enterprises and government both are evolving their business and adopting processes of e-commerce. Since electronic procurement is a modern spectacle that's why this interest has been many reservations. Over early inter-organizational tools, running the process of procurement by using the electronic media will give assorted edge (Mueller, 2001). Illustrational, since 1960s transactions of automated purchasing is being provided by electronic data between suppliers and their buyers. In the late nineteen centuries, organizations follow resource planning program for enterprise (ERP) and after that the internet is start using commercially in 1980s. Furthermore, IN 1990s, this trend followed universally in the worldwide (Office of Government Commerce, 2002) Acquisition of electronic procurement technology hip organizations permit. Firms can unify its communication and interaction with the most decisive suppliers and its reported according to the Epic Technologies in 2010, also traditional set of building organizing equipment help in cost regulating, assure performance of supreme suppliers and keeping an remain in the touch of the potential suppliers in the business tenure. This scheme permits and helpful for managers in order to confirm prices and leverage previous agreement with the assurance of every new quotation of pricing is getting more

modest than the previous time. Electronic procurement helps in development by possessing and assuring the admissible information organize. Mostly information is in form of template which helps the all transactions standardized and traceable (Gioconda Quesada, 2010).

As far as e-procurement was the emerging topic that's why several research on electronic procurement have been conducted. In European organization a learning about the e-procurement is led by (Batenburg, 2007). After this study it has been founded that, nearby is a different status of existence of adoption electronic procurement in different countries. Some countries such as; United Kingdom and Germany are adopting the electronic procurement in the very early ages and the firms belong to these countries having avoidance of low uncertainty. On the other hand, there are countries who reluctant the frequent changes and the adoption rates in those countries are very low. (Orori, 2011) introduce some factors who influence electronic procurement in the manufacturing business. According to (Mburu, 2011) a constructive survey is conducted in Kenya on the application of internet-based procurement department in industries. The reason behind this implication built is the efficiently effective working environment while using technology. This case study centered Survey conducted on the Safaricom Ltd. In Kenya. It has been found that this study has no focused of electronic procurement on an organization performance. This learning is completely intensive on the practices and performance of electron procurement with filling the previous gap on the similar topic.

## **1.2 Problem Statement**

Department who work tremendously for the organization's efficiency and effectiveness is commonly known as procurement. Every organization have some need internally which look after by procurement department, if the procurement department understand that need of the organization and provide required accessories in favor of the other department with by keeping the quality in mind. Providing required accessories on right time, location and person with the minimum utilization of cost will make the procurement department well-organized and operative. (Snider, 2001). However, efficiency is required in the progression of the procurement division and if procurement department shows inefficiency and

disorganization, then it directly impacts the other departments and occasionally the result can be serious. Since e-procurement make it less luxurious, closer and convenient the procuring of suppliers and facilities which organization mandatory over internet using. After all this a question is raised that if e-procurement is using internet to augment the organizational recital then electronic procurement can also be used to simplify the purchasing and sourcing process in an organization. it is proven that it is necessary to enhance the automated procurement activity in the organization (Ogot, 2009). Many studies is conducted on e-procurement and many researcher talked about it and research on different countries around the globe. (Batenburg, 2007), he led his research on the acceptance of e-procurement over European firms. It has been found that some existence countries are the primary adopters of e-procurement like Germany and UK but some countries show reluctant in adoption of this change such as Spain and France. Another study is also conducted on the application of regulatory e-procurement is the South Africa by (Greunen, 2010). Due to general restriction of understanding of how the SCM concepts will works within government environment also the assistances of management of supply chain have also not understood under this study. Globally, man studies are been conducted on e-procurement. Which includes; those factors who effect the initiation of e-procurement in retail industry (Orori, 2011): A investigation conducted in Kenya on retail chain supermarkets ; (Njoroge, 2010) studied those elements who influence practices of e-procurement in the building trade of Kenya. Also, studied the character of e-procurement in amplifying competence in cable business on Safaricom Ltd in Kenya. Moreover, the characteristics management of supply chain has improved, about the decisions of supply chain, relationship with supplier, and acquiring purpose have also turned out to be more significant. According to (Chen, 2004) e-procurement studies are particularly important because procurement is simply a very sensitive function in the process of supply chain Regarding e-procurement, e-commerce is habitually the beginning stage for some public teaching hospitals' overall e-commerce strategy (Chang, 2004). In gradually composite domain of globalized, trading is getting higher with time, better jeopardy and long lasting, the processes of incorporation and methods in the network of the management of the supply chain which require reassuring

information arrangements and technologies (Smart, 2008). Even though overall electronic adoption system usage is relatively unidentified (Hassan, 2014), most scholars approve that the jam-packed effect of e-procurement and after that it is clear that implications the process of electronic procurement and introducing the technological advancement in the organization is getting mainstream than anticipated (Falk, 2005). It is however clear that in context of Pakistan, a research with these specific variables and their effect on organization performance has not been studied. To address this gap, this study focused on the impact of e-procurement on the organization performance using specific variables in Pakistan. Hence as per the discussion above the research is going to examine the impact of e-procurement on organization performance in IT industry of Pakistan.

### **1.3 Research Questions**

How does e-procurement practices affect organizational performance in IT industry of Pakistan?

## **2. Literature Review**

A research conducted in favor to influence the electronic procurement on the performances of an organization and it has been done in Kenya. The aim of the survey was to explore the weight of electronic procurement like collaboration of buyer and supplier, transmission of data, management of systems and trade on logistic presentation of the industrial firm in Kenya. It was found preceding towards e-procurement management system, process of procurement department regularly dealt with secretarial repetitive duties such as discrete dealings, purchasing orders, confirming that the accurate amount of inventory is available etc. In the system of electronic procurement department use technological advancement and it is intended to have faster and more effective procurement process of procurement to reduce procurement costs and fatigues and thereby enhancing organizational performance. This study is conducted to get the detailed analysis of engagement of employees and acceptance of technological advancement in the organization. the main object of this study is to analyze the importance of employee in the purchasing company. To accomplish good engaging connection with employees, an effective e-procurement system is necessary so that procurement department is able to facilitate other departments when needed

because internal customers i.e. employees is very important asset in any running business. Descriptive approach is used for the analysis of the manufacturing firms. Around four hundred and ninety-nine cultivating firms in Kenya were participated in which one hundred and two firms were respondents. The medium of data collection is questionnaire and through multiple regression data were analyzed. The research summary is explained that many organizations in Kenya is adopting electronic mobility and develop their procurement department. Output from the research findings indicates that all variables having significant effect on the component of e-procurement and these variables built strong relationship among the electronic procurement. This learning also give perception that manufacturing firms should need to adopt this system of e-procurement to facilitate the other systems and overall organizational enactment. Further, this study recommends to all managers to generate electronic procurement activities while using information technology (Kituzi, 2016). A survey conducted to investigate the effect of e-procurement on the enactment of an organization Dr. Yusuf Kisbet this research conducted on public hospitals in Kenya and resulted that supply chain units of hospitals which has made procurement practices more effective, accurate and efficient and lack of e-procurement results in reduced quality of distributing facilities in hospital. The objectives of the research were to discover the influences of electronic payment, electronic billing and electronic tendering in the medical sectors. This study employed the use of vivid examination, targeting five hospitals. three and sixty-seven people were responded and participated in the survey. Questionnaires was the key source of gathering facts. A research used together numerical and qualitative data. Independent components were taken from the practices of e-procurement in the manufacturing industry which includes factors such electronic payment, invoicing and tendering. Complains noted in every hour in hospital, quality of services and products and efficiency in operational activity all includes under dependent variable. Through the term of electronic tendering, study originate that competitiveness increased the offering bid in hospitals. This study also concluded that if organization adopt the electronic invoicing so it will help them to make good connective relation with their suppliers as well as customers. As far as payment is consider a very deposit function in every business but electronic payment become a very cheap medium and promote suppliers to pay

on the delivery time by sending the money through online transaction. This learning settles that by the practices of the electronic procurement, hospitals are reducing their operational functions cost. Also, the system of online procurement is helping the organizations to interact with right suppliers and target the right of the potential buyer, this system is time saving as well as cost saving. Dr. Yusuf then indorsed that every hospitals should start dealing their payments through the medium of online transaction since, it is the easy method of system maintaining and also reduce time and cost and make work effective and efficient (Kibet, 2017). Another research was conducted to test the firm size by using the e-procurement submission. This learning revolves around the showing relationship between single variable i.e. submission of e-procurement and firm size. The outcome of the investigation shows that integrated of electronic procurement were more likely use in larger firms. Questionnaires based on self-administration were being used to collect the data from purchasing professionals from 33 different industries. Investigation of the size of firm supposing as an instructive inconstant in the decision process of e-procurement submission, this understanding of application given under this research. Achievement of integration by the use of electronic procurement investigated by this research. as far as it has been founded that integration of effective supply chain is directly proportional to enhanced business performance. Financial status is very important in terms of approaching and implementation of technology in organization similarly, those firms having net worth of \$3.5 billion are not usually implement the use of submission of e-procurement. In return, these firms are neglecting the potential benefit side of the application of e-procurement such as rate reduction, upgraded design of product and services and enhancement of profit. This study shows that importance of integration of SCM with giving knowledge that executed of any expertise unaided is not a universal remedy for enhancing the SCM activity of the firm. Size of the organization is very important aspect to make the electronic procurement process to give fruitful results of effectiveness and efficiency (Giunipero, 2008). Francesco Gardena completed a research in which he presented a model and share the achieving advancement of the e-procurement by quantifying the performance of the procurement department. Through several researches it has been calculated the decentralization, effectiveness,

efficiency are all matters in order to run the organization function smoothly. Implementation of e-procurement is planting in both sectors (communal and privates). As well as in governmental segments, embracing of electronic procurement is more than the industrial change, it gives many more to the organization and make the procurement department beneficial efficient. This implementation of the e-procurement in the public sector is a huge challenge just more than a technological change and it creates an efficient place for the procurement department organizational culture. Evidence of this research suggest that introducing e-procurement has a significant effect in both empirical and governmental sector (Gardenal, 2013).

According to the research conducted by Patrick et al, technological complexity, improvement in knowledge, globalization and the accessibility of digital computerized data innovations are the key to prosperity in every organization. Furthermore, it has been evaluated that the usage of procurement system for the performances and practices in the public hospitals of Ghana. They gaged use of system of e-procurement and practices over the performance of public hospitals in Ghana and exposed that usage of e-procurement system having a statistically significant positive impact on hospital procurement practice and performance. They used self-designed model to investigate their hypothesis and then created a literature framework that acknowledges the positive and significant relation among e-procurement system with the custom for practices of obtaining in hospital. According to their discoveries, the e-procurement system adoption in the procurement of goods and services for public teaching hospitals would aid to overcome the current challenges and variability of goods / services demand in hospital locating follows. In supply chain of hospitals, implementing the e-procurement scheme can result the efficiency in cost. Lessening in the cost of product and services, growth in profit margin and profits, sales performance all leaded by E-Procurement. Through system of E-procurement level of satisfaction among customer will also increase system usage and provide the high-quality products on a minor price to the customers in purpose to retain them and it is the main objective in any organization. The result of this research clearly expresses that e-procurement system procedure has a statistically significant relation with health procurement performance. Top managers should recognize that improving the hospital procurement



performance and integration of e-procurement system applications and hospital procurement practices would result in significant growth of the hospitals. The e-procurement system usage will help hospitals to meet the organizational needs of their staff as well as trading partners (Patrick Boateng Sarpong, 2018). Paul and Boyd conducted a learning on the topic, the development of e-procurement inside the data and communication technology produce trade in Ireland to represent that in manufacturing firms, the e-procurement provided more proficient way outs to drive an immense value into their business. This conducted research use a quantitative approach with a self-explanatory questionnaire used with a sample of 42 from high ranking manufacturing firms. Implementation of the accessed and examine functions of e-procurement are the purposes of this learning. The variables that motivates the growth of e-procurement inside the firm, the benefits arising out of the upgradation of e-procurement and the associated trials in the expansion and implementation of e-procurement system. The research focuses on the magnitude of internet and depicts that the firms which intent to remain competitive, in B2B purchasing market they want their market should be efficient and effective that utilizes the electronic commerce to identify various business related matter related to procurement like supplier potential source, purchases of goods and service from different vendors, transfer payments to buyers or supply in terms of discounts or other benefits based on their purchases patterns and to interact with suppliers . All these requirements of effective business can be easily addressed with the use of internet. The research found that expansion of e-procurement results in streamline processes of supply chain, reduced occupational cost, reduction in un-utilized resources, good relationships with suppliers, increased competition, wider market access, increased profits etc. However, there are certain contests in employment of e-procurement namely management support lacking, time constraints, inappropriate planning, resource limitations, lack of competence and training, data quality and security concerns etc. However, the benefits of e-procurement have an edge over its challenges that may be faced by the firms in its integration and these difficulties with implementation are minimal. Through electronic sourcing and collaboration, the overall conclusion of analysis is that the e-procurement may be a foremost step in making the way to complete provided supply chain integration (Paul O.

Harrigan, 2008). Another study has been conducted on the topic “a contextual analysis of the impact of strategic sourcing and E-procurement on performance” by Kim and Canan. Intend of the study is to consider the relationships among performance of a firm and e-procurement, tactical sourcing, with the influence of business characteristics and environmental factors. Therefore, sources of strategy and electronic procurement are the independent variables and performance of organization is the dependent variable. This research clearly shows the relationship between e-procurement and tactical sourcing, and by the occupational traits and its situation that in which aspect they influence performance of the firm. This research involves the financial, operational and SCM effects that evaluates the firm performance as a multi-dimensional construct. According to their research, strategic sourcing involves purchasing status, communication and coordination inside the organization, sharing of information with supplier and supplier development. On the other hand, e-procurement involves with the performance influence. Though, performance represents operational and financial presentation and performances of supply chain by practical and theoretical views. This experiential examination comprises one hundred and thirty-seven managers from the United Kingdom. The analysis result makes sure that each tactical sourcing and e-procurement have an optimistic result on the enactment of firm. Additionally, electronic procurement creates to possess an encouraging influence on tactical sourcing. The vital findings of this analysis extent because the intensity of competitiveness and doubling turbulence of market, the strategic sourcing and electronic procurement having influence of increasing performance conjointly. Additionally, this study finds anodyne effects on the links which count of method of merchandise life cycle and produce manufacturing method. It is crystal clear from their research that with the implementation of e-procurement and tactical sourcing, a firm can anticipate the improve the performances of the finance, operation and SCM dept. (Minkyun Kim, 2015). Quesada and Rene laded a groundwork on the inspiration of e-procurement on achievement applies on routine with the aim to analyze the bearing of automated acquisition tools on acquisition practices and performance of acquisition. The learning of this paper includes that procurement practices in the organization while using technological advancement

is beneficial for the business. This exemplary was confirmed and examined using a large-scale survey approach consisting of sample of three hundred and sixty-eight respondent of procurement specialists in the US. According to the learning, the first stage of procurement process is information gathering which is the most important phase of procurement process. It includes identification of need of prospective buyer, identification of specifications of need, finding out the alternatives and then the evaluation of these alternatives and most importantly selection of appropriate supplier. The remaining procurement processes include supplier contact, negotiation with the supplier to finalize the price, quantity, quality and delivery time of goods and services, then requisitioning and finally analysis to ensure that the decision taken was appropriate. This research concludes that they exist a direct useful impact between procurement practices and procurement performance. Similarly, technology of e-procurement has also a practical influence with practice, performance and acquisition of procurement. Research outcome conclude that technology of e-procurement has positive affect on manager thinking of both practices and performance of procurement. Practitioners presently inquisitive about accepting e-procurement technology will see the relevant influence on its acquisition applies, the successively, present a completely important bearing on acquisition presentation. Therefore, organizations that area unit implementing e-procurement area unit accomplishing petite advantage in acquisition follows but, at strategic level acceptance of electronic adoption have higher importance (Gioconda Quesada, 2010). Another research conducted on the viewpoint of the internal customer by Alistair Brandon-Jones. The reason of the research is to support our comprehension of quality of e-procurement from the perspective of an inner purchaser, and also mature purify and validate measurement of structural. The exploratory research employed a qualitative study of 58 interviews and 274 surveys. The learning shows that quality of electronic procurement is a secondary building of five universally applicable dimensions of e-procurement namely They also have analytical value for physicians who want reliable views for the internal customer as well as the outer and also give the perception of the customer about the product. It was concluded from the research that the introduction of e-procurement has created important opportunities for better organizational procurement. Although this study has a tremendous

contribution towards Operations and Supply Management, there exists a number of limitations that should be taken into account while interpreting findings for future research (Brandon-Jones, 2017).

### **3. Research Methodology**

#### **3.2 Hypotheses**

H<sub>a1</sub>: There is a significant relationship between e-sourcing and organization performance.

H<sub>a2</sub>: There is a significant relationship between e-evaluation and organization performance.

H<sub>a3</sub>: There is a significant relationship between e-negotiation and organization performance.

H<sub>a4</sub>: There is a significant relationship between e-design and organization performance.

H<sub>a5</sub>: There is a significant impact of e-sourcing, e-evaluation, e-negotiation and e-design on organization performance

#### **3.3 Type and nature of Study**

This research is undertaken to explore relationship among different variables; thus, the most reliable and suitable strategy is quantitative, thus the nature of this research is quantitative. The study intends to uncover solution of the real business problem using the theory and data through statically analyzing data. The research is casual by type, as this research casual is about finding the relationship among electronic sourcing, electronic evaluation, electronic negotiation and electronic design on organization performance.

#### **3.4 Sampling Design**

The population of present study is the supply chain professional presently working in IT industry of Pakistan. In a research a model is a subset of whole, drawn from the overall population in a research. Mugenda and Mugenda (2003) sampling is basically is allocation of data and to collect maximum knowledge from it. They recommend that the scholar should use 100% of the overall on board as a model and it is recognized as a descent stratified model. Thus, the extent of sample of this research is approximately 10% of total population which is 400; due to the issue of trustworthiness, convenience and also population is unknown. In this case no formalization and statistical

technique can be used for the verification of the sample size (Sauders, 2009).

In this survey convenient sampling is used which is the form non-probability sampling technique. The population is unknown and there is no list of participants available and it is unable to find exact no of supply chain professionals working in IT industry of Pakistan, due to non-regularity and data availability therefore this is the reason behind selecting this sampling technique.

### **3.5 Instrumentation**

The study adopted questions related to independent and dependent variable from two researches, Chang (2013) and Gengatharen, (2018) had designed survey instrument, the instrument was adopted from preceding researches to measure these e-procurement constructs. The instrument is comprising of twenty-one questions related to each inconstant. The responses to the questions were coded on five-point Likert scale 1 = strongly disagree, 2 = Disagree, 3 = neither agree nor disagree, 4 = Agree and 5 = strongly Agree for the all the variables.

### **3.6 Procedure of Data Collection**

The data collection technique is very useful in a situation where closed ended questions need to be asked in order to get precise and to the point data from the primary sources. Present study data is collected using survey questionnaire, respondents are asking to fill the questionnaire with their consent. Distribution of questionnaire using both physical and electronic mean of communication like internet.

### **3.7 Content Validity and Factor Analysis**

Validity is defined as the ability of a questionnaire to measure what it intends to measure. The instrument must include a set of items to ensure that it tap the concepts in order to be valid (Sekaran, 2003). For instrument to be valid and consistence, the values of Cronbach  $\alpha$  should values in the range of 0.60–0.87. As this learning is tentative, 0.50–0.60 is painstaking enough.

According to the research of (Coakes et al., 2005) analysis of dynamic is a data reducing technique which is used to minimize the high valuing method to a low extent of original variables that concluded the vital material which have variables. The study used

exploratory factor analysis based on inquiry of principal component to identify issues from diverse articles of each idea of Independent and dependent variables under study. Each factor is tested specifically in order to quantify the products.

### **3.8 Correlation Analysis**

To measure the relation among two different inconstant correlation analysis is used. The asset of relation amongst two variables can be easily identified from the coefficient of correlation. Coefficient value can take any value between  $\pm 0.01$  to  $\pm 1.00$ . A relationship can be of two nature; positive and negative. Positive coefficient shows a positive relationship that among variables and the variables are directly proportional to each other. By contract a negative coefficient represent a negative relationship, as increase in value of one variable decreases the value of other vas this shows the reciprocal relation among both variables (Sauders, 2009)

### **3.9 Multiple Regression Analysis**

Multiple Regression study is recycled to forecast dependent adjustable value through several independent variables. It also explained the change in independent contrast can be occurring due to dependent variables. The co-efficient of determination ( $R^2$ ) shows the degree of prediction which your regression equation can find. The purpose of co-efficient can take any value between  $\pm 0.01$  to  $\pm 1.00$  (Sauders, 2009).

## **4. Findings and results**

In order to comprehend basic characteristics of the figures demographic analysis were performed on the data gathered in the research. These demographic traits of the research data are illustrated in Table 4.1. From table we identified that the total observations were 384, out of total 384 respondents 64% were male (N=246), and 36% female (N=138). The respondents were asked about their age, so according to the age distribution, the dominant age group was the one between 26 and 30 (58%), and the second between the ages of 20 and 25 (23%). The first two age groups 26-30 and 20-25 respectively are combine account for 81% of the total age distribution of the respondents in the sample. The detail overview of the distribution frequency according to age can be seen in Table above. The respondents were further also asked about their education, and

the analysis of result suggest that majority of the respondent were educated enough as the dominant group of the respondents have bachelors and master's degree which indicate high expertise, combine result of them is (N=348), i.e. 91%. Breakup of the dominate education group indicates 59% and 32%, master's and bachelor's respectively. The next most dominant group among the respondents were M Phil accounted for 5% of the overall population of the respondents which further contribute in high educated profile of the defendants. Furthermore, the plaintiffs were inquired about their marital status. Most of the respondents are unmarried, as the 69% mark themselves unmarried and 31% of them declared themselves married. Total no of the marital status is 264 and 120 respectively. The overview of the respondents' structure according to the martial status and education is shown in table above. In the end of the questionnaire respondents were also ask about the experience they have in their field. Most respondents have 1-3 year of experience (39%), followed by 4-6 year of experienced persons (27%), less than 1-year experience holders (14%), 7-9-year experience person (8%), 10-12-year experience holder (6%) 13-15-year experience person (2%) and only 5% have over 15 year of experience in their field or industry. The key findings from this demographic analysis are that the respondents who will drive this research result and finding are male mature personnel fall under age category of 26-30 year, having education of master's level with unmarried marital status and they have 1-3 year of experience. The difficulty these respondents have faced will help drive this research and contribute in better or change organization performance through e-procurement.

**Table 4.1**

Particulars	Categories	No	%
Experience	Less than 1 year	54	14%
	1-3 years	150	39%
	4-6 years	102	27%
	7-9 years	30	8%
	10-12years	24	6%
	13-15 years	6	2%
	Over 15 years	18	5%
Age	20-25 years	90	23%
	26-30 years	222	58%
	31-35 year	30	8%
	36-40 years	24	6%

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	41-45 years	6	2%
	Over 50 years	12	3%
Education	Metric	18	5%
	Intermediate	0	0%
	Bachelor	120	32%
	Master	228	59%
	MPhil	18	5%
Marital Status	Married	120	31%
	Un Married	264	69%
Gender	Male	246	64%
	Female	138	36%

Validation of analysis is the ability of questionnaire. The instrument in order to be valid must include a set of items to ensure that it tap the concepts in order to be valid and the outcomes of Cronbach  $\alpha$  should values in the above 0.60. Using SPSS, the validity of the questionnaire was check through reliability analysis, Tables 4.2 present the reliability analysis of the items related to each variable with Cronbach's alpha value of each inconstant of dependent and independent used in this research. Throughout the process of reliability analysis four items of E-Sourcing (independent variable) have Cronbach's Alpha value =  $.723 > 0.60$ , the result supports internally consistency of the items amid the responses. Five items of E-Design (independent variable) have Cronbach's Alpha value =  $.726 > 0.60$ , here response is also internally consistent. In the case of E-Evaluation and E-Negotiation three items each, their Cronbach's Alpha values are =  $.791 > 0.60$  &  $.693 > 0.60$  respectively. Items of dependent variable which organization performance are consistent and passed the reliability criteria Cronbach's Alpha value =  $.800 > 0.60$ .

**Table 4.2**

Variables	No. of items	Cronbach's alpha
E-Sourcing	4	.723
E-Design	5	.726
E-Evaluation	3	.791
E-Negotiation	3	.693
Organization Performance	6	.800

In order to bring down large no of factors in to their respective construct principal component factor examination was cast-off to



measure the items validity. Outcomes suggest that total twenty-one items of independent and dependent variables combine which are loaded in their respective column and no item was eliminated due to irrespective loading. Items factor loading related to each independent and dependent variable are loaded. Factor loading value would be superior than 0.40 of each item according to standard into its relative principal component. There are total twenty-one components as a whole, 4 items belong to E-Sourcing, while 5 of items are belongs to E-Design, E-Evaluation consists of 3 items, and 3 items are belonging to E-Negotiation and finally the dependent variable items are consisting of 6 items. As per the standard and rules factor loading values among all components range from 0.471 to 0.982. All values are automatically above 0.40 as far as the overall falloff from the examination of the factor analysis is contented the standards of construct validity.

**Table 4.3**

<b>Rotated Component Matrix<sup>a</sup></b>					
<b>Items</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>	<b>Factor 5</b>
E-Sourcing	.678				
E-Sourcing	.567				
E-Sourcing	.711				
E-Sourcing	.791				
E-Design		.722			
E-Design		.982			
E-Design		.762			
E-Design		.588			
E-Design		.891			
E-Evaluation			.725		
E-Evaluation			.471		
E-Evaluation			.725		
E-Negotiation				.551	
E-Negotiation				.461	
E-Negotiation				.791	
Organization Performance					.515
Organization Performance					.872
Organization Performance					.708
Organization Performance					.671

Organization Performance					.591
Organization Performance					.771

Table 4.4 demonstrates the result of correlation test. It is shown from the table that coefficient value for e-sourcing and organization performance is 0.682, which indicate that there is a moderate high connection among e-sourcing and organization performance in IT industry of Pakistan, in conjunction to this the p value of this relationship is equal to 0.000 at 0.05 confidence interval level (2-tail) which indicates that the relationship is significant, this result supports  $H_{a1}$ : There is a significant relationship e-sourcing and organization performance. The empirical result specifies that e-sourcing and organization performance have positive relationship which means improving e-sourcing in procurement so it will improve organization performance. In order words we can say that providing sourcing using technology will have an optimistic upshot on the organization enactment in IT sector. When finding supplier is easy, and selecting them based on e-sourcing process, so it helps enhance company performance and which ultimately leads towards success. Another correlation test result is also demonstrated in Table 4.4, it is shown from the table that the coefficient value for e-evaluation and organization performance is 0.5888, which indicate that there is a moderate correlation or relation among electronic evaluation and organization concert, in conjunction to this the p value of this relationship which is alike to 0.000 at 0.05 confidence interval level (2-tail) which indicates that the relationship is significant, this result supports  $H_{a2}$ : There is a significant relation among electronic evaluation and organization enactment. The empirical result further specifies that e-evaluation and organization performance have positive relationship which means improving evaluation of supplier will improve organization performance in IT industry. In order words we can say that if there is a proper process or system where one can evaluate the supplier past information for analysis so it will have optimistic outcome on gaining which ultimately leads toward improved organization performance. When employees are provided with a proper information and trend of prices, so it helps enhance

decision making and good procurement which will not help in cost reduction but also in better organization performance.

**Table 4.4**

Pearson Correlation					
		E-Sourcing	E-Design	E-Evaluation	E-Negotiation
Organization Performance	Coefficient	.682**	.438**	.588**	.608**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	384	384	384	384

\*\* Correlation is significant at 0.05 level (2 tailed)

Third exploration hypothesis answer is available in Table 4.4, it is shown from the table that the coefficient value for logistics and quality of delivery is 0.608, which indicate that there is a moderately high association among e-negotiation and organization performance in IT industry, in conjunction to this the p value of this relationship is equal to 0.000 at 0.05 confidence interval level (2-tail) which indicates that the relationship is significant, this result supports H<sub>a3</sub>: There is a significant association among e-negotiation and organization enactment. The empirical result specifies that e-negotiation and organization performance have positive relationship which means if the agreement with the suppliers are done using technology so it will contribute in organization performance enhancement. When can say that E-negotiation allow managers to conduct agreement quickly using technology and allow them to reduce waste of time and resources which used in tradition method of contract with suppliers? Lastly Table 4.4 also demonstrates the result of correlation test for e-design and organization performance. It is shown from the table that the coefficient value for e-design and organization performance is 0.438, which specify that there is a moderate correlation between e-design and organization performance, in conjunction to this the p value of this relationship is equal to 0.000 at 0.05 confidence interval level (2-tail) which indicates that the relationship is significant, this result supports H<sub>a4</sub>: There is a significant relation among e-design and organization performance. The empirical result specifies that e-design and organization performance have positive relationship which means improving e-design will improve organization performance. In order words we can say that it is not that if the company use technology for

procurement so they will perform better but the important thing is the design of the e-procurement system which can contribute towards organization performance.

The results of the regression analysis are shown below. Table 4.5 illustrates the regression model summary, the degree of goodness fit of regression model is given in the model summary result section. The R value is (0.656), which indicate that there is a moderate high impact of e-sourcing, e-evaluation, e-negotiation and e-design on the organization performance. The value of R<sup>2</sup> is (0.656) which states that only 66% of variation in organization performance can be explained by e-sourcing, e-evaluation, e-negotiation and e-design in this regression model. It is also observed that Significance F value is less than 0.000 which states that combined effect of all independent inconstant is substantial.

**Table 4.5**

<b>Regression Model and Coefficients Summary</b>					
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>F</b>	<b>Sig.</b>
1	.656 <sup>a</sup>	.529	.504	88.338	.000b
a. Predictors: (Constant)					

**Table 4.6**

<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>T</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	.522	.383		1.223	.060
	E-Sourcing	.589	.334	.483	3.122	.000
	E-Design	.456	.422	.455	2.003	.000
	E-Evaluation	.401	.333	.389	4.145	.000
	E-Negotiation	.477	.244	.451	2.425	.000
a. Dependent Variable: Organization Performance						

The Table above 4.6 illustrates the details of the regression coefficient result of the measured variables and significance level of e-sourcing, e-evaluation, e-negotiation and e-design which are all the independent variables. For e-sourcing, e-evaluation, e-negotiation and e-design the table show coefficient value (0.589), (0.401), (0.477) and (0.456) respectively. In conjunction to this if we analyze the significance values of p=0.000, p=0.000, p=0.000, p=0.000 of e-sourcing, e-evaluation, e-negotiation and e-design respectively. So, for every unit increase in e-sourcing, e-evaluation, e-negotiation and e-design a

0.589-unit, 0.401-unit, 0.477-unit and 0.456-unit increase in organization performance in IT industry of Pakistan. The result provide evidence that there is a significant and positive impact of e-sourcing, e-evaluation, e-negotiation and e-design on organization performance. According to the results obtained, regression equation is as follows:

$$OP = 0.522 + 0.589(ES) + 0.401(EE) + 0.477(EN) + 0.456(ED) + e$$

Here 0.522 is the value of constant, 0.589, 0.401, 0.477 and 0.456 are elasticizes of e-sourcing, e-evaluation, e-negotiation and e-design respectively. OP refers to organization performance that is our dependent variable, whereas e is error term.

The findings of the current research are consistent with the research which revealed that the factors of lead time management i.e. technological integration, working with multiple suppliers, and queue control have optimistic influence on the customer satisfaction. Whereas, JIT as lead time management factor is found to be insignificant in this research study. Research participants responded that use of advance tools helps them in processing information, conveying data, and establishing correspondence among suppliers as well as customers, which results in a smaller number of complaints, less returned goods, and good consumer feedback. Research results are also in line with former conclusions of by Otiso, Chelangat, & Bonuke (2012) that service delivery through information communication technology has an optimistic influence on customer satisfaction.

The second variable “working with multiple suppliers” is found to have optimistic influence on customer satisfaction. As the participants of this research study revealed that they are involved in working with different suppliers that facilitates in fulfilling requests and needs on time and easier to work which results in high customer satisfaction. This finding is also parallel to previous findings of Mandal (2015) that the score of customer satisfaction is higher with multiple sourcing as compared to single sourcing.

This study finds that JIT has insignificant impact on customer satisfaction. It is revealed through the responses of research participants that JIT as lead time management factor provides assistance in increasing productivity, reducing costs regarding inventory and warehousing, makes delivery effective in terms of quality and time, and make available sufficient quantities that

customer demands. However, it has no influence on customer satisfaction with the services. Results of this study are not similar to previous study conducted by Sharma & Gangrade (2015) to investigate the implementation of JIT for achieving the goal of customer satisfaction revealed that firms in order to find ways to improve quality, reduce cost, and increase customer satisfaction could adopt JIT system as it is such a tool that that can be used to achieve competitive advantage.

Lastly, it is observed that Queue management as a factor of lead time management has significant and positive impact on customer. The responses from the participants of research study shows that queue management enable the staff to serve customers in a better way, guide customers to fast and appropriate holding up line, keep customers well informed regarding their pause status, and facilitate more consumers in a minimum required time more effective which result in a strong relationship with customers and making them more satisfied from the products and service offerings. Results of this study are also similar with previous findings of Yusuf, Blessing, & Kazeem (2015) that customers are highly dissatisfied when firms have not implemented any queuing models.

## **5. Conclusion**

If the organization wants to achieve the organizational goal, then the procurement department plays main role. Needs of other department are to be filled by the procurement department, so if the procurement department fill that need on time, in budget, at right place then it will save the time and organization work efficiently. Also, organization will satisfy their customer by this efficient working phenomenon of procurement department (Snider & Rendon, 2001). Similarly, if obtaining section show inefficiency in its fulfilment of targeted task then the other subdivisions would also exaggerate and the result of this can be severe. The first customer of procurement subdivision is the other department of their organization because other department somehow, depends on procurement department so the efficiency is mandatory of the procurement department.

To improve organizational performance the management may have to accept effective procurement measures or strategies. Thus, the primary purpose of this research is to examine organization performance through e-procurement factors i.e. electronic sourcing,

electronic evaluation, electronic negotiation and electronic design and their impact on organization performance. This study deliver hypothetical or experimental direction of how these approaches can be used effectively and boost their impact on organization performance. In order to attain this research unbiased, primary data has been assembled from the supply chain professionals who are working in IT sector through physical and online questionnaire using google form. After data gathering the study the effects of electronic procurement components (independent variables) on organization enactment in IT industry. A general estimation equation is also developed built on the findings of the learning, the facts used in this study which is a combination of primary and first hand data.

In suggestion, the findings of this study indicate that all the four factors affecting organization performance including electronic sourcing, electronic evaluation, electronic negotiation and electronic design have significant and positive relationship with organization performance in Pakistan. Moreover, it is found out that the key factor that influence organization performance is e-sourcing component of e-procurement it is because of the highest value of coefficient in both correlation and regression test followed by e-negotiation, e-evaluation and e-design.

In conclusion with the importance and significance of the present study, e-procurement is generally in its early stage in Pakistan. However, procurement remains the main component of supply chain management and its importance cannot be ignored. There is tremendous number of researches available on supply chain management and procurement not few are focus on electronic procurement and its benefit for organization which indicate that it is still an unexplored topic. From the overview of the available literature, it is evident that very little researchers have conducted research on this topic worldwide and in Pakistan. Most available literature it does not offer a real answer to the main question of this paper, i.e. the importance and significance of e-procurement and its influence on organization enactment. This learning fills the potential break in the literature by undertaking an experiential research on the key factors e-procurement that are influencing organization performance. These strategies have impacted in achieving better organization performance in Pakistan.

From research application viewpoint, this research will sustenance in decision making associated to procurement strategy deployment, deciding which component of e-procurement is important and have significance so that strategy should be used through detailed consideration of all strategies. Managing key factors electronic sourcing, electronic evaluation, electronic negotiation and electronic design among other things in procurement is vital for managers to boost their confidence before forming or deploying a supply chain strategy. The study has great standing as its benefits supply chain managers, especially for those who are looking to improve organization performance.

## **5.2 Future Recommendation and Limitation**

This research is much specific in terms of finding the e-procurement factors and its influence on organization presentation in IT segment of the Pakistan, but in for the sake of future research researcher may conduct research for finding e-procurement impact on different industry or as a whole in general form and any other country.

Moreover, this research present robust support that organization performance in IT Industry can be determine by electronic sourcing, electronic evaluation, electronic negotiation and e-design which means that current research is limited to the certain variables only, so its recommended for the future researcher to explore more variable related to e-procurement in Pakistan.

Further, the finding of this research is limited to the Karachi Pakistan, it is recommended and a good opportunity by keeping this research a sample conduct their researches on the other cities extend this research topic nationwide.

This research is conducted in a country where the supply chain management is just in his emerging phase. The reason behind this is lack of advancement, regulation and management culture. Many companies have been facing difficulty because they do not have functionality of supply chain; they still work in seith culture approach.



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