

COMPARISON OF EXISTING LEVEL OF E-PROCUREMENT PRACTICES IN PUBLIC SECTOR CLIENT ORGANIZATIONS AND CONTRACTORS IN THE CONSTRUCTION INDUSTRY OF SINDH

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ABSTRACT

Construction industry is evolving amid the fourth industrial revolution. Transportation, commerce, manufacturing and many other industries ripened the current technological advancement and are striving to utilise every development in the IT sector. The procurement of construction works is known to be very conventional and backward in the adoption of digitalisation. The construction industry's procurement and supply chain are blamed for the most inflated cost of construction projects, mainly attributed to a lack of transparency and trust between the industry stakeholders. This research explores the challenges of e-procurement adoption in the industry and identifies the potential opportunities for its usage. The aim of this research to compare the existing level of e-procurement practices in public sector client organizations and contractors in the construction industry of Pakistan. SPSS software was used to interpret the collected data. according to the existing level of e-procurement practices in public sector client organizations and contractors in the construction industry of Sindh; highest standard deviation is of what kind of function of software is used in your organization i.e. 1.889 and lowest standard deviation is are you aware from supplier registration catalogue purchasing i.e. 0.570. the dependability of the findings gleaned from the respondents was examined using the Cronbach's alpha values. the data collected from respondent's responses have a Cronbach's alpha value of 0.708.

Keywords: SPSS, Cronbach's, Contractor, E-Procurement.

I. INTRODUCTION

The broad use of e-procurement is a result of the expanding use of information technology across a number of sectors. Organizations are choosing procurement strategies that are more reliable, quicker, and more robust than conventional strategies (Amish Aqeel and Muhammad Asim, 2019). One of the alternative and fast track procurement system with reduced cost is E-procurement. E-procurement, which includes all associated procedures, is the term used to describe the online purchasing and selling of products and services. The phrase, which derives from "electronic procurement," refers to the process of facilitating transactions through the internet. Typically, authorized and registered users of e-procurement platforms may discover specialized goods and services from suppliers or buyers that may be hard to find among the connections of sales or buying teams (Angappa Gunasekaran et al., 2009). A research by (Richard A Lancioni et al., 2000) found that the internet has the potential to improve communication between customers and vendors. As a consequence, service levels are raised and logistical costs are decreased. A crucial component of information technology that significantly affects businesses is e-procurement. As a result, many companies now depend on its linked tasks to run effectively. E-procurement is defined as the use of information technology to streamline business-to-business buying transactions of goods and services in the research done by (Fang Wu et al., 2007). On the other hand, e-procurement is described by (Rebecca Angeles, Nath, Ravi 2007) as the practice of businesses making purchases of goods and services through the internet.

E-procurement is defined as an e-commerce tool that refers to all processes relating to the purchase of goods and services over the Internet. From the point of B2B (business to business) is a means of facilitating purchasing (or procurement) management by reducing procurement costs (time spent on demand). Reason on integrating e-commerce with strategy to gain competitive advantage, the incorporation of e-procurement in its business strategy would lead the company to a significant reduction in time by the buyer with operating

activities and low value-added activities and mainly a decrease in costs the entire procurement cycle. Presutti (2003) shows certain benefits for the company with the use of e-procurement, such as: significantly reduces procurement costs; lays down adaptive, efficient and collaborative relationships with suppliers; enables you to monitor the buyer behavior; improve sources by discovering more suppliers; allows flexible access to purchasing information anytime, anywhere. The word comes from the English electronic procurement refers to the buying and selling of products and services through the internet. Typically, e-procurement sites allow qualified and registered users to find buyers or suppliers of specialized products and / or services, which are often difficult to locate among the contacts of purchasing or sales teams. (Gunasekaran McGaughey Ngai & Rai 2009). Depending on the approach, buyers or sellers can forecast prizes or bid according to the volume traded, for example, creating a competition that can especially benefit the company they are buying. The development of e-commerce (EC) technologies, involving the use of the Internet to the business, has created numerous opportunities for managers effectively shape and direct their supply chains competitive. In this sense, Information Technology (IT), more precisely the Internet, a prominent role in the acquisition of competitive advantage by the companies; cite that IT participates in the value chain and transforms the way value activities are carried out and the transformations in nature of the links between them. This transformation not only affects the competitive, it also reshapes the way products meet buyer's needs. More specifically, the Internet has changed the way you do business. The Internet makes it possible to increase of communication between consumers and their suppliers, improving the levels of service and reducing logistics costs. In this context, one of the activities of that has caused great impact on the company are the functions related to e-procurement. E-procurement is part of so-called information technology. The settings are varied. Presutti (2003), for example, defines e-procurement as "a technological solution that facilitates corporate purchases through the use of the internet". E-procurement refers to business-to-business transactions that use e-commerce to identify potential sources of supplies, to buy goods and Business Management and Strategy services, to make payments and to interact with suppliers.

Following the growth of the use of electronic commerce in the business-to-business market, there was the globally significant adoption of e-procurement. This adoption is not limited to the private sector and public sector experiences are also beginning to be reported. In addition, the use of e-procurement has been associated with sustainable practices, especially with the reduction of solid waste generation (Walker, Brammer, 2012). The performance of the electronic contract has to have the same requirements of admissibility with regard to the traditional contract, as an example, be in line with the law. However, the peculiar characteristic that differentiates them is that the celebration of the electronic contract is done through the Internet, which has electronic networks and programs as a communication medium for its execution. In this way, we observe that electronic contracting is currently incorporated into the customs of society, so that it is already possible to enter into contracts through electronic means to acquire any product or service, including electronic contracting that has been used in several legal areas, such as such as consumerism, labor, international trade, administrative and so on.

II. LITERATURE REVIEW

The Internet provides access to an on-line global marketplace which operates on a 24 hour basis, with millions of customers and thousands of products and services. It also provides companies with more cost effective and time-efficient means for working with customers, suppliers and development partners. Internet based electronic commerce will enable companies to shorten procurement cycles by ordering and paying through use of online catalogues; cut costs on both stock and manufactured parts through competitive bidding; reduce development cycles and accelerate time-to-market through collaborative engineering and product implementation; gain access to world-wide markets at a fraction of traditional costs; ensure product, marketing information and prices are always up to date.¹ Increased global competition and pricing pressures are forcing companies to continually identify new opportunities for enhancing productivity and reducing costs. As a result, many companies begin to focus their attention on improving supply chain management activities, particularly corporate procurement processes. Procurement is a process with many components that can influence the result. And it is clear that since procurement is responsible for controlling a dominant share of the company's

revenue, it directly impacts profitability and the success of the overall business enterprise (Adam, Nabi R, 2017).

E-Procurement is a process of procurement of required resources or services by making use of ICT. To make the e-Procurement more effective & efficient, integration of financial, transportation, legal, and communication infrastructure is important (Ohmae, 2000).

Other than these four factors, training and development of the personnel handling e-Procurement activities, security concerns, readiness of the society to utilize the information and communication technologies (ICT), and the impact what this wireless technologies can produce should also required to be considered. Traditionally, the purchasing was function of having a transaction between a buyer and a seller only. In modern purchasing function, it required to be executed on wider level. In today's modern purchasing different procuring partners are interconnected with each other and helping them come up to the desired outcome (Shah, 2002)

Stanton and Stanton (2002) have developed a model of internet procurement to show the link between personality traits & predisposition towards innovativeness, and adoption of e-Procurement function. E-Procurement produces different benefits for the organizations like savings on transactional costs and buying cost, time required for processing of the information exchange and control (Croom 2006). E-procurement has a higher potential for cost savings and improving business transactions than online retailing or ERP systems, and will allow the organizations to permanently and fundamentally redefine the best way, how they can do business in the future (Neef 2010).

PROBLEM STATEMENT

The changes generated by the adoption of this new procurement process should be analyzed in order to guide how they will occur. There should be some steps for analyzing the e-procurement procedures such as identifying changes in processes, skills necessary for employees to carry out new activities and the changes in the functions of the employees. It is crucial to determine what will be done and who will be responsible for the execution. The organizational environment changes radically with the adoption in e-procurement, thus the factors that influence e-procurement processes must be addressed.

III. METHODOLOGY

Research Methodology is a systematic method of solving a problem related with research. It depicts the complete plan of how the entire process of research has been carried out. The main elements of this chapter include the explanation of questionnaire formation, collection and analysis of data.

This research aims to see the effect of quality cum cost-based contractor selection on construction project performance in construction industry of Sindh. To achieve the purpose, the whole task was split into number of goals which is further explained in detail below along with framework.

Stage 01 Development of Research Aim and Objective

The topic was given by the supervisor and later on detailed research was done to reach towards aim and objectives.

Stage 02 Literature Review

After aim and objectives were set, detailed research was carried out for objectives.

Stage 03 Questionnaire Development Process

After literature review of aim and objectives, questionnaire was made.

Stage 04 Data Collection

Data was collected through different sources.

Stage 05 Data Analysis

Data collected was analyzed on excel sheet and through SPSS 25 version.

Stage 06 Conclusion and Recommendation

Based on the analysis and the obtained results, conclusion was drawn. Along with this, recommendations were given too.

IV. RESULTS AND DISCUSSION

Qualification of Respondent

The qualification of respondent is shown below; which shows that total respondents from Bachelors level were 61, Masters level were 3, B.Tech/Diploma were 32, Ph.D were 7 and others was 1.

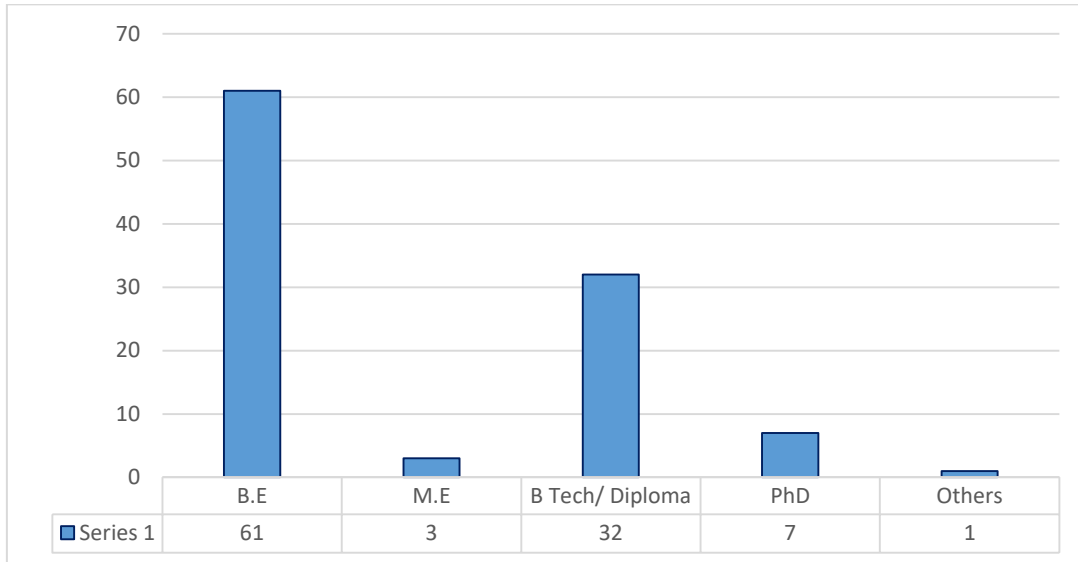


Fig. 4.1: Qualification of Respondents

4.2.2 Working Position and Experience of Respondent

The working position of the respondents working in different organizations to compare the existing level of E-procurement practices in Public sector client organizations and contractors in the construction industry of Sindh, is shown below also the respondents who filled the questionnaire are listed below in fig 4.2.

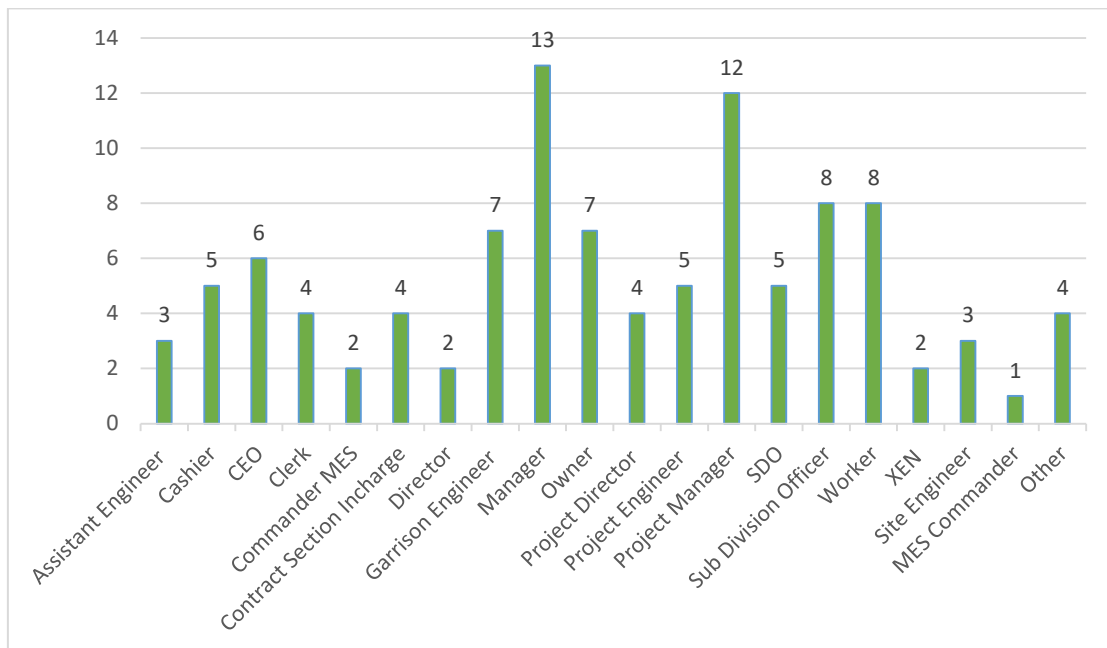


Fig. 4.2: Working Position of Respondents

It can be seen that respondents included; Assistant Engineer, Cashier, CEO, Clerk, Commander MES, Contract Section Incharge, Director, Garrison Engineer, Manager, Owner, Project Director, Project Engineer, SDO, Worker, XEN etc.

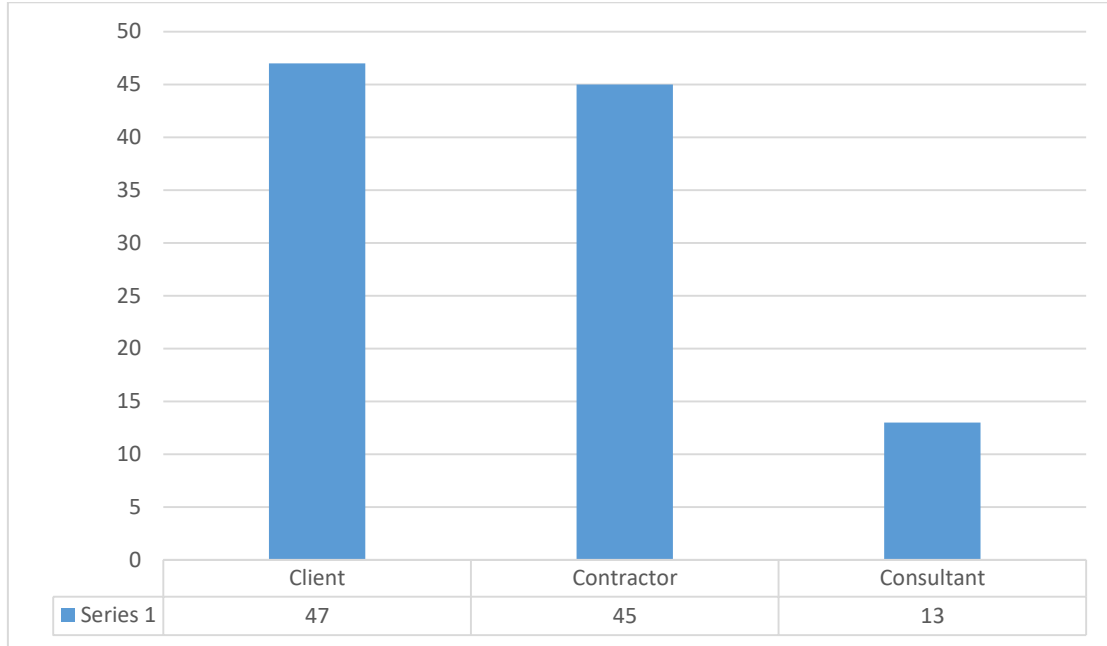


Fig. 4.3: Type of Respondents

It can be seen that types of respondents were maximum were clients i.e. 47. In addition to this, secondly contractors responded i.e. 45 and at last were consultant i.e. 13.

Questions related to E-Procurement

1. Are you aware of e-procurement in construction industry?

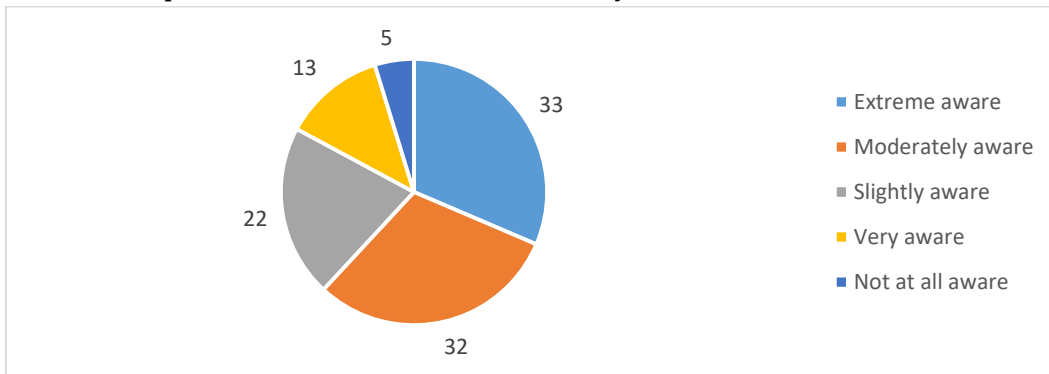


Fig. 4.4:

For awareness in e-procurement, 105 responses were received, from which 33 were extreme aware, 32 moderately extreme, 22 slightly aware, 13 very aware while 5 were not at all aware.

2. Which kind of procurement are you using?

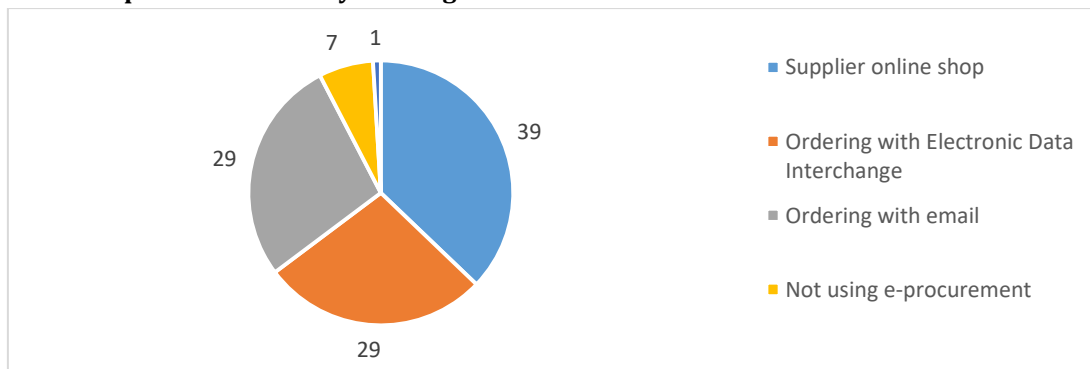


Fig. 4.5:

Out of 105 responses 39 supplier online shop, 29 Ordering with Electronic Data Interchange, 29 respondents use emails, 7 not using e-procurement.

3. Which E-procurement software are used?

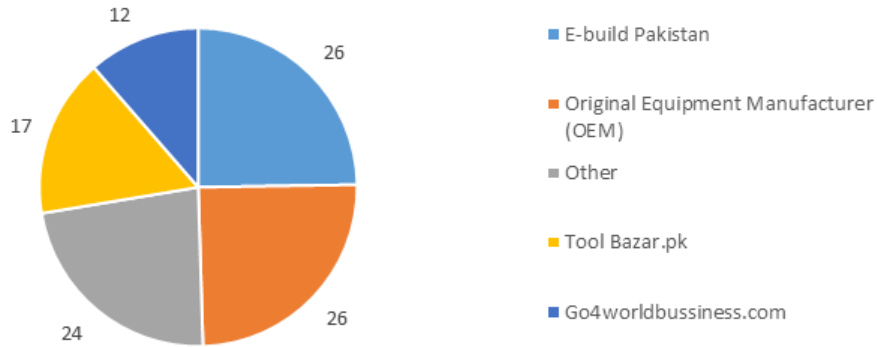


Fig. 4.6:

Out of 105 responses E-build and OEM both are used by 26 respondents, then comes Tool Bazar which is used by 17 respondents and 12 respondent use Go4worldbussiness.com and 24 response uses other software not listed.

4. Which kind of functions are available in software used by your organization?

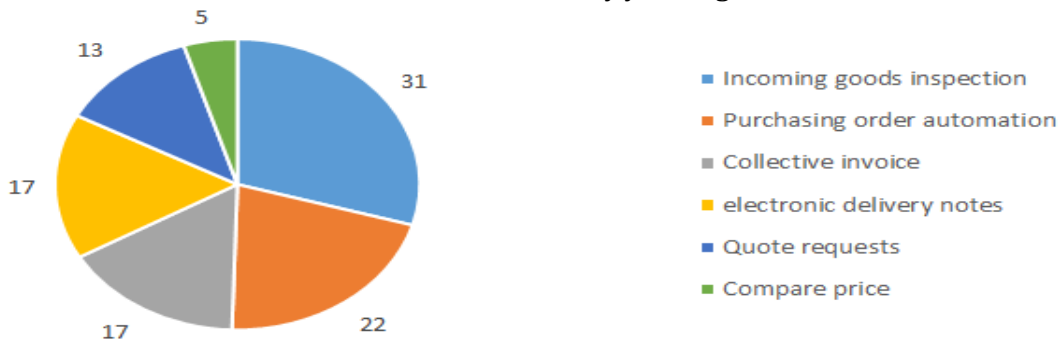


Fig. 4.7:

Majority of software provide all of these services, 31 provide incoming good inspections, 17 collective invoices, 22 provide purchasing order automation 17 provide electronic delivery notes, 13 and 5 provide quote requests and price comparison respectively.

5. Whether function below are used in E-procurement of Materials?

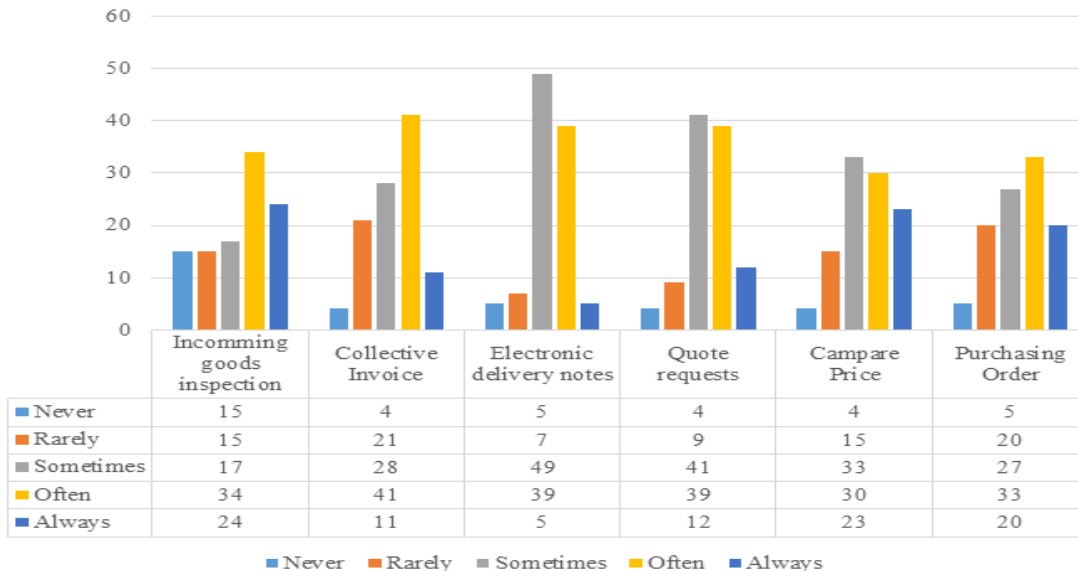


Fig. 4.8:

It can be concluded that ELECTRONIC DELIVERY NOTES is responded maximum in category of sometimes while on secondly 39 on second with often.

6. Whether function below are used in E-procurement for Equipment?

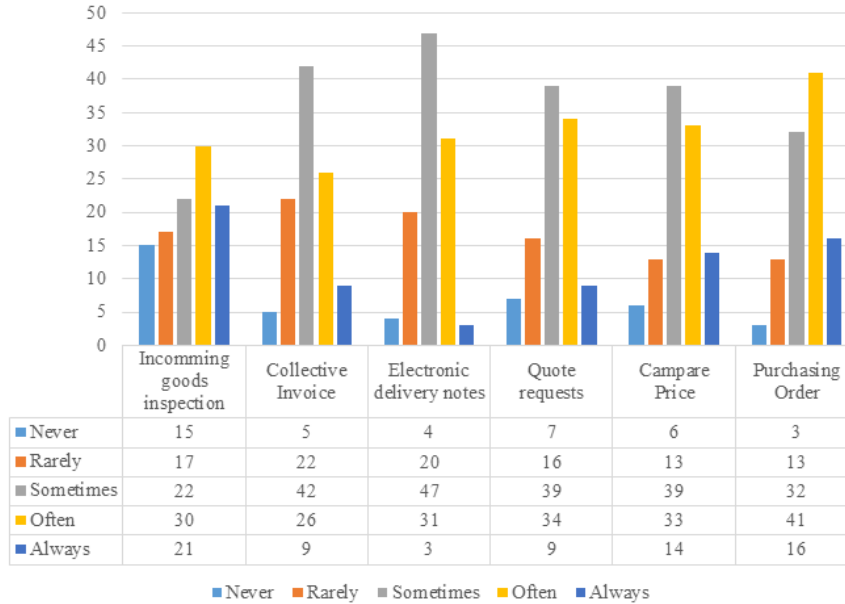


Fig. 4.9:

It can be concluded that ELECTRONIC DELIVERY NOTES is responded maximum in category of sometimes while on secondly 39 on second with sometimes in QUOTE REQUESTS.

7. Which kind of bidding are you using for equipment and materials?

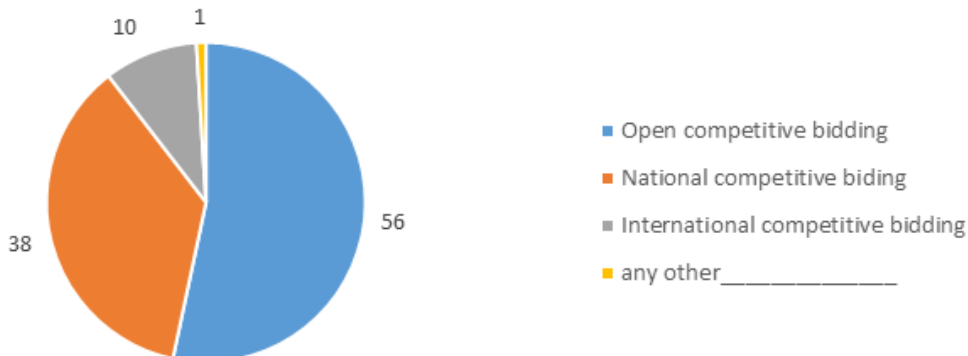


Fig. 4.10:

Out of 105 responses, 56 respondent with open competitive bidding, 38 selected national competitive bidding while 10 chose International competitive bidding.

8. What is the method of bid submission of materials?

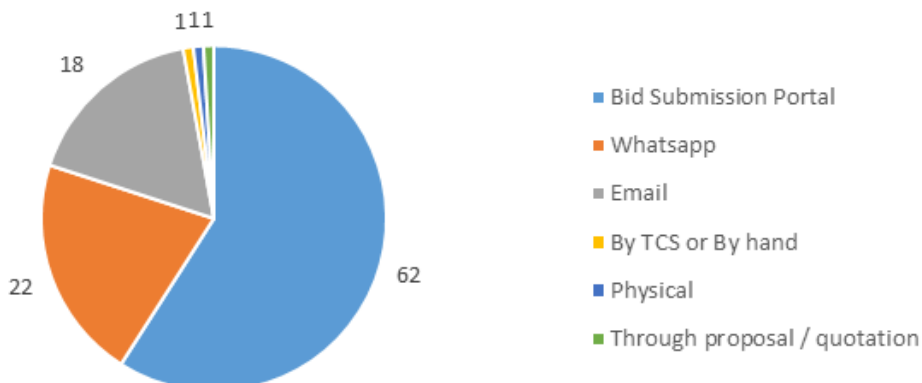


Fig. 4.11:

Majority of respondent uses Bid Submission portal, 22 respondent utilizes WhatsApp for this cause while 18 uses Email platform only 2% use other methods likes Courier or by hand, physical and through proposal.

9. Are you aware from supplier registration catalogue purchasing?

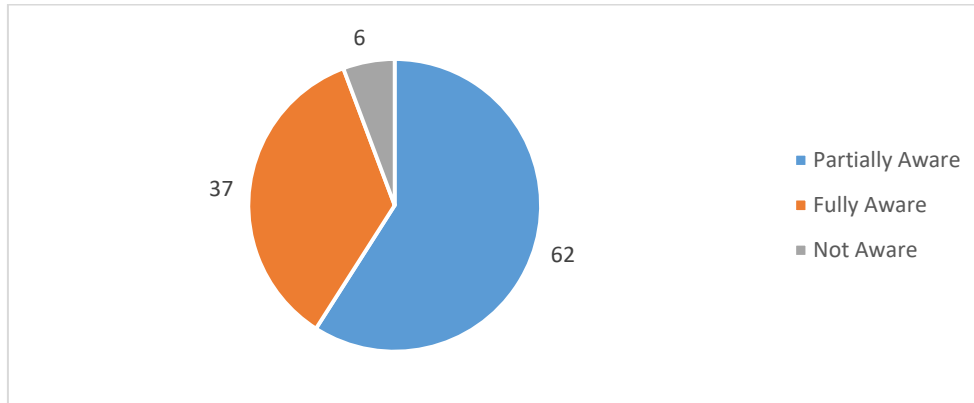


Fig. 4.12:

On **supplier registration catalogue purchasing**, 62 were partially aware, 37 was fully aware and 6 were not aware at all.

10. What is your opinion about facilities for using e-procurement in construction industry?

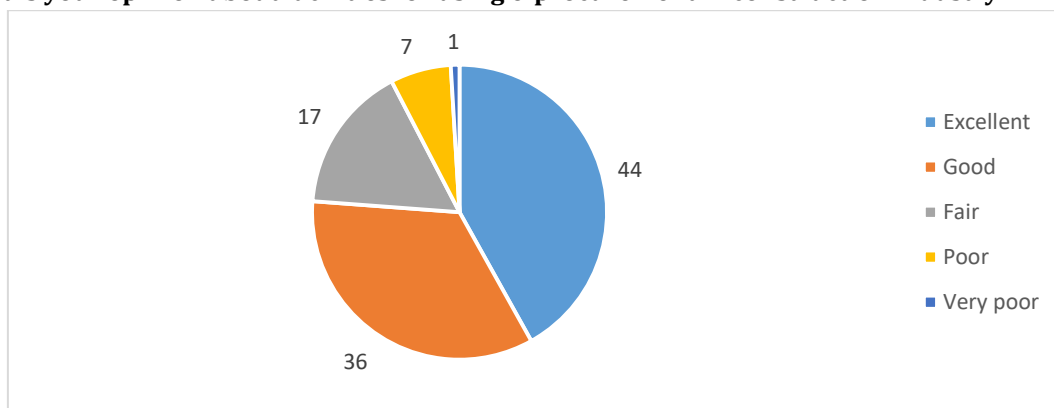


Fig. 4.13:

Facilities of e-procurement in construction industry, 44 responses were excellent, 36 good, 17 fair, 7 poor and 1 very poor.

4.3.2 Reliability Test

The dependability of the findings gleaned from the respondents was examined using the Cronbach’s alpha values. The data collected from respondent’s responses have a Cronbach’s alpha value of 0.708

Table 4.1: Reliability Test for Section I of Questionnaire

Cronbach’s Alpha	No of Items
0.708	10

V. CONCLUSION

This study focused on identifying the “Comparison of existing level of e-procurement practices in public sector client organizations and contractors in the construction industry of Sindh”. This research identifies the existing level of E-procurement practices in Public Sector client organizations and contractors in the construction industry of Sindh along with this identifies impediments as well as measures to bridge the gap of E-procurement by showing mean and standard deviation using SPSS’s descriptive statics. The concept of E-procurement has been widely spread with the growing use of informational technology in every field. Organizations are adopting methods of procurements that are more reliable, less time consuming and relatively stronger than the traditional methods. Literature concerning e-procurement suggests that in a number of

sectors in developed countries, the adoption of e-procurement in procurement activities is in its starting period. From this point, the motivation of this study has come into existence. According to THE EXISTING LEVEL OF E-PROCUREMENT PRACTICES IN PUBLIC SECTOR CLIENT ORGANIZATIONS AND CONTRACTORS IN THE CONSTRUCTION INDUSTRY OF SINDH; Highest standard deviation is of what kind of function of software is used in your organization i.e. 1.889 and lowest standard deviation is Are you aware from supplier registration catalogue purchasing i.e. 0.570. The dependability of the findings gleaned from the respondents was examined using the Cronbach's alpha values. The data collected from respondent's responses have a Cronbach's alpha value of 0.708. From the outcome of the research, it was carried out in the Sindh Province of Pakistan; it may be extended to remaining three provinces and comparison between all four provinces should be done to know gap between all four provinces.

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