

**EVALUATING THE E-GP SYSTEM
IN BANGLADESH WATER DEVELOPMENT
BOARD**

**Dissertation submitted in partial fulfillment of
the requirements for the degree of
Masters in Procurement and Supply Management**

Submitted by

**Abdullahil Baki Md. Ruhunnabi
MPSM, Batch VII
ID:14282041**

**Masters in Procurement and Supply
Management**

May , 2015



**BRAC Institute of Governance and Development
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Statement of the author

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Abdullahil Baki Md. Ruhunnabi
MPSM, Batch IV
ID: 14282041

Certificate

This is my pleasure to certify that the dissertation entitled “Evaluating the e-GP system in Bangladesh Water Development Board (BWDB)” is the original work of Abdullahil Baki Md. Ruhunnabi that is completed under my direct guidance and supervision. So far I know, the dissertation is an individual achievement of the candidate’s own efforts, and it is not a conjoint work. I also certify that I have gone through the draft and final version of the dissertation and found it satisfactory for submission to BRAC Institute of Governance and Development (BIGD), BRAC University in partial fulfillment of the requirements for the degree of Masters in Procurement and Supply Management.

Dr. Rizwan Khair
Supervisor

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I am grateful to my parents and spouse who assisted me in many ways. Finally, I offer my thanks and appreciation to them who have not been mentioned here due to lack of space, but have contributed to the work in different ways and occasions.

Abstract

Government of Bangladesh has implemented Electronic Government Procurement (e-GP) solutions in 2011 for its procurement as a step towards digital Bangladesh. Since then e-GP has brought a change in the businesses process of public procurement. There are limited empirical studies in the literature on the adoption of e-procurement in Bangladesh, that is, at the macro-level. Nevertheless, such a study will help to develop policies, strategies, and procedures to implement e-GP. Understanding the importance of such a study, this study was conducted based on a questionnaire survey about the user experience and perception about e-GP in Bangladesh Water Development Board (BWDB). The main objective of this study is to identify how the users of e-GP are adopting it and what they think about it. A conceptual framework has been developed for the evaluation of e-GP, and this subsequently has been tested with data collected from BWDB. Also, this study examines the current status of e- GP acceptance in BWDB. Finally, some recommendation is proposed based on the conceptual and empirical analysis for the evaluation of e-GP. The results indicate that despite of some implementation challenges e-GP system has achieved a wider level of acceptance among Procuring Entities. Users have very strong perception regarding e-GP that this in future will be very helpful for ensuring transparency and accountability in Public Procurement Process. And also the think current e-GP system is showing above average level performance which is not that much dissatisfactory but there is options and opportunity to improve the performance.

Keywords: e-GP; Government Procurement; Public Procurement; E-procurement; PPR; PPA

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Abbreviations and Acronyms

ADP	Annual Development Programme
BWDB	Bangladesh Water Development Board
CIPS	Chartered Institute of Purchasing and Supply
CPTU	Central Procurement Technical Unit
GOB	Government of Bangladesh
HOPE	Head of Procuring Entity
ICT	Information and Communication Technology
IT	Information Technology
IMED	Implementation Monitoring and Evaluation Division
NOA	Notification of Award
OGC	Office of the Government Commerce, UK
PE	Procuring Entity
PPA 2006	Public Procurement Act 2006
PPR 2008	Public Procurement Rules 2008
REB	Rural Electrification Board
RHD	Roads and Highways Department
TEC	Tender Evaluation Committee
WB	World Bank

CHAPTER ONE



Introduction

1.1 Background of the Study

Electronic Government Procurement (e-GP) is the application of an efficient high quality framework for public sector procurement management, facilitated through electronic and information technology . E-GP is very much prospective in establishing accountability, transparency, and making Government procurement system efficient and effective. It changes the procedure of Government procurement function and bring about reforms to the procurement system.

E-Procurement initiatives have been supported significantly by the donor communities including the World Bank, the Asian Development Bank, the Inter-American Development Bank and the African Development Bank. Several schemes have already taken place, lead by different organizations to define the standard procedures and strategies for the implementation and development of e-procurement systems, and many countries have already introduced e-procurement into their procurement practices through various business models and approaches.

The Government of Bangladesh, has started an extensive public sector reforms, and pushing forward to manage implementation challenges to enhance the performance of public procurement gradually as part of strengthening overall governance. In order to achieve its aim and objective Government introduced e-GP in June 2011. Initiatives have been started to ensure compatibility of the procurement monitoring system in CPTU, in accordance with the e-GP roadmap and to fulfill the requirements of the Public Procurement Act/Rules. Bangladesh introduced e-GP system compliant to the PPA-2006 and PPR-2008 with four target agencies, anticipating that it will help to establish an Effective online platform for Monitoring and Evaluation of public procurement system and , standardization of the procurement procedure through the standard online bidding document templates and processes.

National e-Government Procurement (e-GP) portal (i.e. <http://eprocure.gov.bd>) of the Government of the People's Republic of Bangladesh is developed, owned and being operated by the Central Procurement Technical Unit (CPTU), IME Division of Ministry of Planning. The e-

GP system provides an on-line platform to carry out the procurement activities by the Public Agencies - Procuring Agencies (PAs) and Procuring Entities (PEs). The e-GP system is a single web portal from where and through which PAs and PEs are able to perform their procurement related activities using a dedicated secured web based dashboard. The e-GP system is hosted in e-GP Data Center at CPTU, and the e-GP web portal is accessible by the PAs and PEs through internet for their use.

This complete e-GP solution introduced under the Public Procurement Reform (PPR) Program is being supported by the World Bank and gradually used by all government organizations. This online platform also helps them ensuring equal access to the Bidders/Tenderers and also ensuring efficiency, transparency and accountability in the public procurement process in Bangladesh. However, is it been used properly? This study will uncover the reality of the scenario which exists in public sector organizations in Bangladesh.

1.2 Rationale of the Study

e-GP system in Bangladesh was introduced successfully on a pilot basis and eventually being rolled out to all PEs of four implementing Agencies. These agencies are, Bangladesh Water Development Board (BWDB), Local Government Engineering Department (LGED), Rural Electricity Board (REB) and Roads and Highways Department (RHD). e-GP is now expanding to all government's implementing Agencies who deals with public procurement. All the stakeholders, including Bidders/Tenderers / Applicants / Consultants (National and International), PEs, procurement related Committees, payment service providers, Development Partners (DPs), media, Operation, Maintenance and Management Entity (OMME), e-GP system administrators, auditors and general public are getting access to e-GP system and information as per the Terms and Conditions of Use and Disclaimer and Privacy Policy. The main purpose of introducing e-GP was

- to reduce the cost of the procurement process for both government and the private sector
- to improved process transparency, credibility, consistency and integrity
- to improved accountability for procurement outputs and outcomes .

Bangladesh Water Development Board is one of the target agencies for implementing e-GP system. BWDB is spending Tk. 23 Billion on an average every year for procurement of goods, works and service. The research is intended to find out the changes those has come as the result of introducing e-GP system and whether the system is aligned with its perceived outcome.

1.3 Statement of the problem

e-GP was first introduced on pilot basis in the CPTU and 16 other Procuring Entities (PEs) under 4 (four) implementing agencies, namely: Bangladesh Water Development Board (BWDB), Local Government Engineering Department (LGED), Roads and Highways Department (RHD) and Rural Electrification Board (REB). These agencies are also called as target agencies. According to the project paper, by the year 2017 these target agencies which includes BWDB will invite 100% of their annual bids/tenders through e-GP portal. Already these agencies are inviting at least 60% of their annual bids through the e-GP portal (PPRP/IIAF Project Paper 2014:11).

A transformational change has been occurred in the field of public procurement of Bangladesh after the introduction of e-GP. There is an ongoing argument among the stakeholders regarding the usefulness of e-GP. Pros and cons of new procurement system are being weighed against one another. One group argue that the stakeholders are not yet fully ready for the new system and the perceived benefits and outcomes of the e-GP system need to be reassessed; on the other hand, the other group believe the e-GP system of procurement is far better than the manual system. Somebody criticize the e-GP system in our country that the World Bank has been influencing the governments, mostly of third world countries, for introducing a e-procurement system for establishing the interest of their own.

In the field of procurement, a group of executives argue that introduction of electronic government procurement (e-GP), has developed and positively influenced the public procurement system; other hand, the other group comment that e-GP system has some short-comings and it needs more testing and debugging before full time implementation. So it

is necessary to find out the facts behind this contention. This is the incentive of the present study.

1.4 Research Objective

The purpose of the study is to assess the effectiveness of e-GP System in Procurement of Bangladesh Water Development Board. Specific objectives of the study are:

- To identify and examine the user satisfaction level and perceptions regarding Electronic Government Procurement System (e-GP) system in BWDB.
- To suggest recommendations for further improvements needed in e-GP system.

1.5 Research Questions

- How is e-GP system functioning in BWDB?
- Are the BWDB users satisfied about system, information and service quality of Electronic Government Procurement System (e-GP)?
- What lessons can be learnt from implementation of e-GP system in BWDB

1.6 Scope and Limitations of the Study

Bangladesh government t had an Annual Development Program of Tk. 860 Billion for the year 2014-2015. Participation of BWDB in ADP is only 2.5 %. So this study doesn't reflect the overall picture. This study will not cover stakeholders from all BWDB's operating divisions of Bangladesh. This study will survey some of BWDB's operating regions. The nature of services BWBD provides is different from other Government organizations so some of the findings may be organization specific. Moreover, lack of time did not allow in-depth research and analysis of the issues.

1.7 Organization/Structure of the study

The method followed from initiation to conclusion of this study is as follows:

- Collection of documents, reports and guidance notes on subject matter for literature review and strengthening theoretical knowledge based on which work is carried out;
- Collection of e-GP performance reports from the WB;
- Designing of interview questionnaire;
- Selecting key informant interview participants;
- Analyzing the data from various dimensions and developing hypothesis/ideas;
- Forming conclusions and recommendations;

1.8 Chapter Outline

The organization of this study is summarized below: Chapter 1 discusses about the background, rationale, and objectives of this study. It highlights the problem statement why the writer opts for this study. It also describes the limitations of this study as desk review. This study is based on both primary and secondary data.

Chapter 2 describes the literature review of this study. The chapter in a nutshell tries to give a good picture of how the electronic government procurement is conducted and administered. Chapter 3 describes the approach and methodology, sampling process and analysis of the sampling technique both in primary level and secondary level. Chapter 4 is a chapter outlining the sampling analysis, data analysis, forming observation on what categories, types of observations, segregation of observations from various angles to establish hypothesis. It also focuses the trend analysis of observations to form opinion. Then, Chapter 5 provides conclusion and recommendations of this study based on the information leading to conclusion.

CHAPTER TWO



Literature Review

2.1 Theoretical Overview

2.1.1 Procurement

Procurement is the acquisition of goods and services for the need. According to CIPS, “Procurement describes all those processes concerned with developing and implementing strategies to manage an organization’s spend portfolio in such a way as to contribute to the organization’s overall goals and to maximize the value released and/or minimize the total cost of ownership”. (CIPS Procurement Glossary, 2014)

Procurement reflects the more proactive, relational, strategic and integrated role of the function in modern organizations. Procurement may act as a department, a role or a process in an organization. , procurement process starts with the review of the expenditure portfolio and the analysis. This concerns potential stakeholder identification and engagement with, specifying business needs and preparing a business case. Procurement Strategies may involve in-sourcing, outsourcing, competitive bidding, direct negotiation, and a variety of other sourcing strategies. Once the strategy is developed, the execution will involve market engagement and the issue of the RFI and the RFP and/or negotiation. Once offers are evaluated, the optimum solution will be selected and the appropriate contractual agreement established.

Procurement is a challenging job that requires a range of expertise and capabilities. This needs analytical ability which is helpful for expenditure analysis and evaluation of offers, as well as the ability to understanding , collaborating and connecting with supply markets too. In terms of interpersonal skills, influencing skills and facilitation skills are just as important as negotiation skills.

2.1.2 Public Procurement

Usually, the primary goal of public organizations is to achieve and provide defined service levels. In public procurement, Public procurement can be defined as is the procedure that is used by the government organization or departments or agencies for acquisition of goods and services.

Usually public procurement is subject to defined rules and policies and procedures which cover how the relevant decisions should be made.

In public procurement the concern government officials have to follow a set system for procurement According to the laws & regulations,. Rules & regulations may cover the way of advertisement should be published for suppliers, the criteria on which a supplier should be selected, and the way to specify and enforce the requirements to be put upon the supplier. In general the aim of such a public procurement system is to take advantages of open competition among suppliers and to reduce the risk of corruption, coercions and collusion.

2.1.3 e-Procurement

E-Procurement is defined as the application of technology and infrastructure to the following aspects of the procurement environment:

Tendering: The acquisition of high value, low volume goods, works and services by seeking bids (proposals) via a public process followed by the evaluation of bids and award of contracts.

Purchasing: The acquisition of low value, high volume, goods, works and consulting services by direct quote in the open market or from pre-qualified suppliers, and payment.

Management of the procurement function: the development and management of contracts, consolidation of procurement data to provide public information and aid future decision making, and the evaluation of the achievement of procurement outcomes for business and the community. (GOB, WB 2006:13)

e-Procurement involves the online conduct of business-to-business procurement processes using web-based applications. The implication of e-Procurement is that it facilitates buyers to locate prospective suppliers, review product choices, select products and make purchasing transactions directly over the Internet. e-Procurement applications may be an web-based ERP solutions that automate transactional procurement processes. e-procurement can facilitate simplified quotation and tendering processes and bring together multiple buyers/sellers in a single environment.

The significance of e-Procurement is not simply the automation of procurement workflows such as procurement planning , creating invitations, preparing bidding documents, giving purchase orders, and receiving and payment for goods/services. e-Procurement system changes the procurement process by facilitating the value propositions of multiple suppliers to be accessed in one place and at one time to create a ‘one-stop shop’ for all categories, and reduce the friction involved in traditional commerce.

2.1.4 Electronic Government Procurement

Electronic Government Procurement (e-GP) is the use of a standard and efficient management framework for public sector procurement, facilitated through information and communication technology . E-GP is very much prospective in establishing accountability, transparency, and making Government procurement system efficient and effective . Electronic Government Procurement is also referred as Electronic Public Procurement.

An expert group from UN stated several principles for E-procurement implementation for public sector in their report (Report of the Expert Group Meeting, 2011:VII-IX):

- E-Procurement is a governance practice that should go beyond ICT aspects. It should not be not just about placing an “E” in front of outdated procurement practices.
- Though E-Procurement does not guarantee the complete elimination of corruption practices, but it can reduce the rate and work as an obstacle against corruption. Also this can be an instrument for effective and efficient public administration.
- E-Procurement holistic approach to modernize public procurement systems not just using ICT.
- The integration between public financial systems and E-Procurement aspects is necessary for managing the end to end procurement process including payment, but not necessarily required for getting started on the basic implementation of a system.
- For each one of the basic phases of an E-Procurement process several recognizable standards , approaches, strategies, , are available.
- Less developed countries may consider hybrid approaches (on-line and off-line) while implementing E-Procurement in public sector. Also the can combine centralized and decentralized approaches based on country and particular region specific features.

- The governance and capacity development is ,more important than the availability of technology .Government should invest on capacity building before investing highly on infrastructure for E-Procurement.; This also depends highly on to the attitude of political society towards transparent approaches and engaging the supplier community and civil society.
- T E-procurement system is not a “quick-fix” system implementation plan. it is a business process re-engineering project that needs a time over 10 to 20 years period;
- The long-term benefit of the E-procurement system will come from analyzing the information collected in the system over the years of operation to better understand spending patterns, the marketplace and processes applied. Governments need to give consideration to the information required for analytical and reporting requirements and interaction with other system to obtain to most value from the procurement information management system provided by e-procurement practices. (UN, 2011:viii-ix)

2.1.6 e-GP in Bangladesh

The e-GP system is a single web portal through which PAs and PEs are able to execute their procurement activities. e-GP provides a dedicated web based dashboard which is secured and easy to access. It is hosted in the e-GP Data Center at CPTU. The web portal is accessible publicly through internet for use.

This e-GP solution was introduced under the Public Procurement Reform (PPR) Program supported by the World Bank. Use of this system is gradually increasing in all government organizations. This online web application also ensures equal access to the Bidders/Tenderers and also gives the assurance of efficiency, transparency and accountability in the public procurement process in Bangladesh.

The e-GP System has been implemented in two phases(e-GP portal 2015:¶4):

e-Tendering System: Covering complete eTendering processes such as centralized user registration, preparation of Annual Procurement Plan (APP), preparation of Bid\Tender document, preparation of Bids/Tenders, invitation of Tenders, sale of Tender Documents (eTD), conducting online pre-bid meeting, collection of bid\Tender security, on-line

Bid\Tender submission, Bid opening & evaluation, negotiations (where applicable), and contract awards.

e-Contract Management System (e-CMS): Covering complete eContract Management processes, such as preparation of work plan and its submission, defining milestone, tracking and monitoring progress, generating reports, performing quality checks, generating running bills, vendor rating and generating completion certificate.

All the stakeholders, including Bidders/Tenderers / Applicants / Consultants (National and International), PEs, procurement related Committees, payment service providers, Development Partners (DPs), media, Operation, Maintenance and Management Entity (OMME), e-GP system administrators, auditors and general public are getting access to e-GP system and information as per the Terms and Conditions of Use and Disclaimer and Privacy Policy(e-GP portal 2015:¶6).

The e-GP system is used by all concerned, for procurement of goods, works and services using public fund, following the 'Government Procurement (e-GP) Guidelines' prepared under the provision of Section 67 of the **PPA -2006** and Rule 128 of **PPR-2008** and issued

The e-GP System of Bangladesh Comprises of following key Modules/Functionalities (e-GP portal 2015:¶8). :

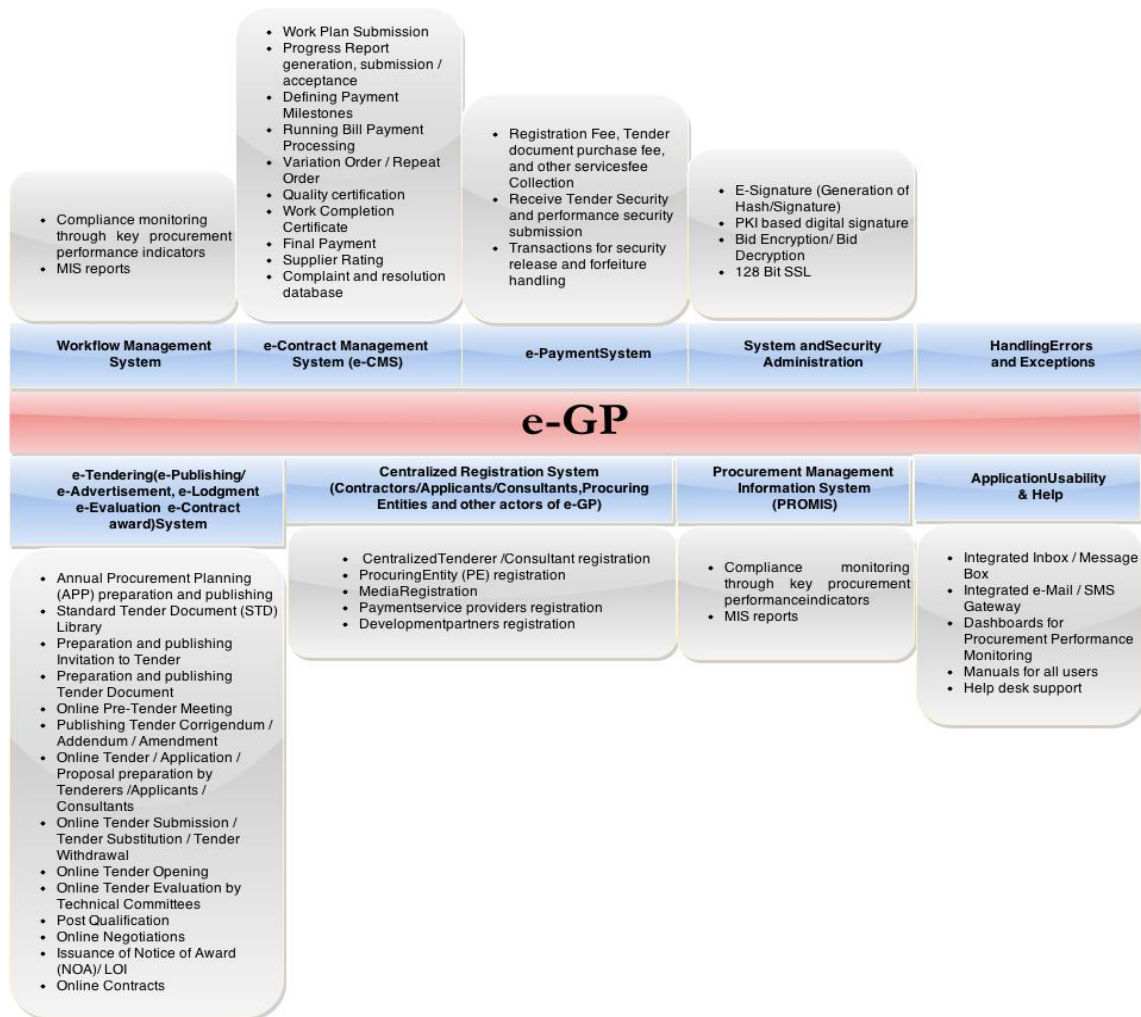


FIGURE NO-2.1: Modules of e-GP system in Bangladesh (<http://eprocure.gov.bd>)

2.1.5 e-GP in Bangladesh Water Development Board (BWDB)

Bangladesh Water Development Board (BWDB) started its operation in 1959 as the water wing of the erstwhile 'East Pakistan Water and Power Development Authority' in 1959. As the principal agency of the government for managing water resources of the country it was given the responsibility of accomplishing the tasks of executing flood control, drainage and irrigation projects to increase productivity in agriculture and fisheries. After the independence of Bangladesh, the authority was restructured in 1972 into two different organizations to deal with water and power separately. BWDB was created under the Bangladesh Water and Power Development Boards Order 1972 (P.O. No. 59 of 1972) as a fully autonomous organization. The reform program and structural adjustment process were undertaken by the GoB for transformation of BWDB is the enactment of the BWDB Act, 2000 that requires the BWDB's

functions be guided by the National Water Policy (NWPo)-1999 and National Water Management Plan (NWMP)-2004. Policy making and overseeing the overall management of BWDB is now vested on the Governing Council (GC) with thirteen Members headed by the Minister, Ministry of water Resources.

Bangladesh Water Development Board was one of the target agencies under PPRPII. The implementation of e-GP in BWDB started in FY 2011-2012 with 4 PE offices inviting 2 tenders each through e-GP portal on pilot basis. After the success of pilot program, the next FY 2012-2013, all PE offices were instructed to invite at least 2 tenders through e-GP portal. In the FY 2013-2014, 50% of BWDB's tenders were invited through e-GP portal and in this FY 2014-2015 all tenders (100%) is being invited through e-GP portal. Although The primary focus is to invite the OTM and LTM tenders, BWDB is using all features currently available in the e-GP portal. **(PPRPII AF 2013:40)**

The Contract and Procurement Cell, of BWDB is working as the PMC (Project Monitoring Coordinator) from BWDB's part This office monitors the e-GP performance and helps in implementation of e-GP in BWDB. It provides necessary training ,guidance and technical support to the PE offices of BWDB. Other then this, CPTU has a central support desk to solve technical problems occurring in the run-time. WB and CPTU also monitors the performance of overall e-GP system implementation and publishes yearly report.

2.2 Readiness for e-GP

A report (WB 2006) on e-GP Readiness Assessment that appraised GOB's public procurement environment by taking respondents opinion from stakeholders in public procurement was published by World Bank. Which assessed the level of readiness of GOB's public procurement environment to assist it in building strategy for transition towards e-GP. It provided comments on the degree of readiness on nine key components related to e-GP.

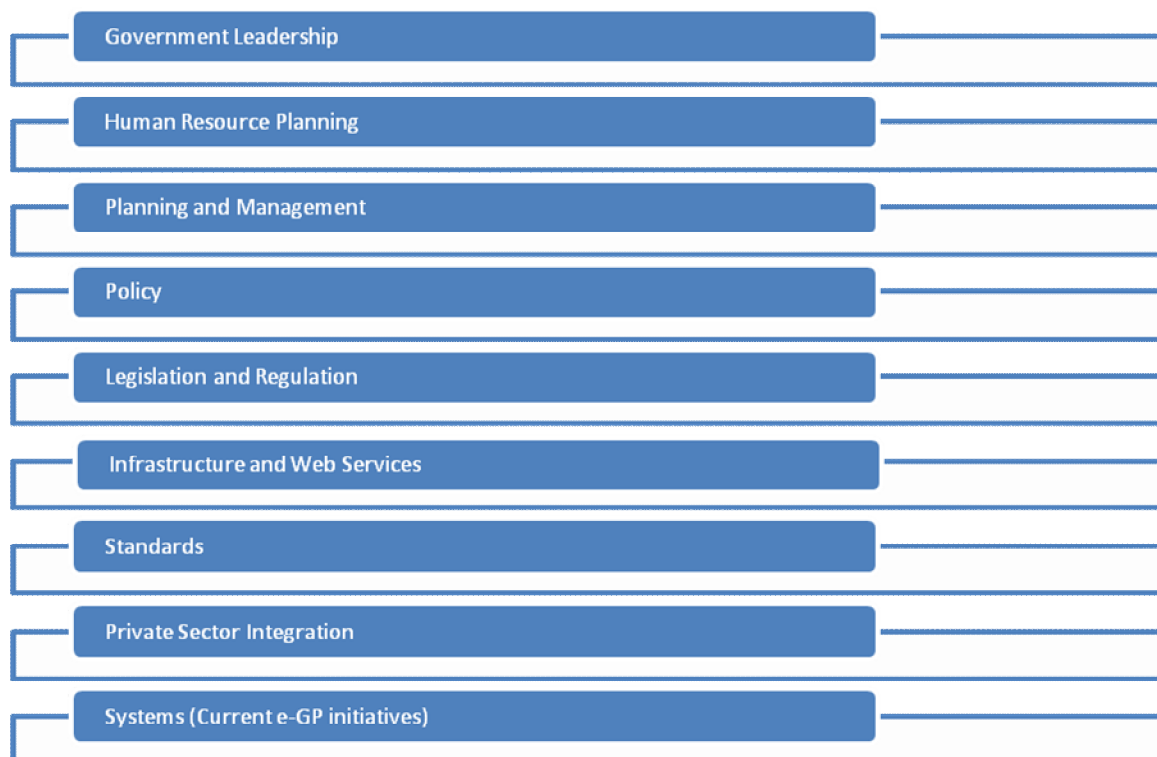


FIGURE NO-2.2: Components for measuring readiness for e-GP in Bangladesh (WB 2006:6)

The report (WB 2006:18-39) said GOB has effective government patronization is in place with the setting up of the CPTU, the new regulations, the development of standard bidding documents, and the drafting of legislation. The report addressed that there were significant gaps in the level of human resource management to support current and future reforms in procurement. The assessment found ICT planning to develop the infrastructure is loosely linked to a future strategy for e-GP and management of the procurement process appeared as little effective management of agency responsibilities and monitoring of contract outcomes. The report also addressed absence of enough publically available policy and developed strategies to provide direction for, and integration of, government procurement with other e-commerce issues. Though the legislation can provide support required for the functioning of the introduction of e-GP, There is a good case for having a well resourced, independent, policy and regulatory body to facilitate the introduction of e-GP. According to that report The telecommunications network in particular is poorly integrated .Telecommunications and internet infrastructure was developing but there are many policy, technical and business issues needed to be addressed before achieving a national infrastructure that is integrated, reliable, affordable, has sufficient speed, and is widely accessible. .To assist e-GP initiatives in

particular the issues of easy access to broadband and the cost of access should be addressed. The report found Little work had been done on procurement market and technical standards, which could cause major problems for integration of government e-services in the future. The assessment said the key to the relationship is to build trust and confidence with the private sector by effective consultation, awareness raising of government intentions and addressing the concerns of suppliers. The report suggested pilot of an e-Tendering system could be implemented.

The report summarized the levels (scale of 5) of readiness for each component as following:

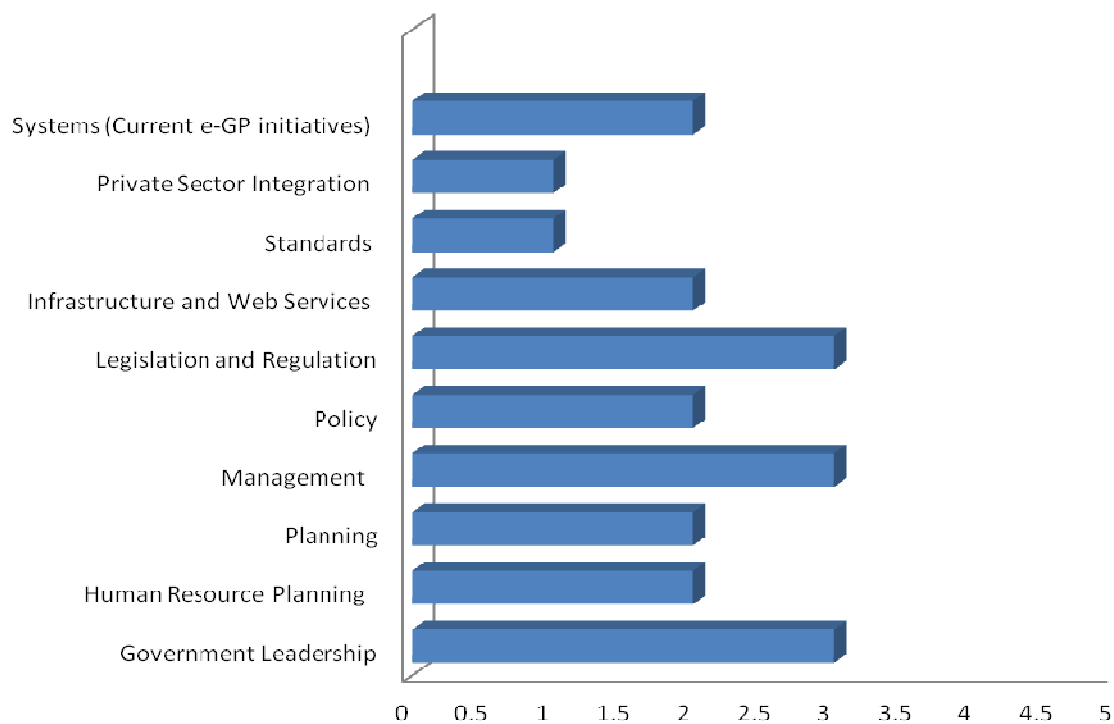


FIGURE NO-2.3: Level of readiness for e-GP in Bangladesh (WB 2006:10)

2.3 Challenges and Success Factors for e-GP implementation

According to Knut Leipold (2007) implementation of e-GP system involves some risks and difficulties which are often misinterpreted . The connotation of Effective e-GP reflects in areas of organizations culture , the way how its Human Resources are operated and directed and tin their skills, The regulations ,and operational methods.

A research on “Challenges of implementing Electronic Government Procurement, A Case Study on Bangladesh Water Development Board” (Alam, 2012) showed some key challenges of e-GP implementation. Some of the challenges identified by the research are following:

- Required competency of the users in using the system.
- Lack of Bidder’s Interest in participating in bids invited through e-GP system.
- Problems occurring in the execution of e-GP system.
- Threat of security breach.
- Problem with power availability.
- Lack of support from top management and obstacle from powerful person of Government.
- Lack of logistic Support and internet connectivity.
- Possibility of confidentiality breach.
- Absence of central databank

The research also recommended some practical measures for better implantation of e-GP in Bangladesh:

e-Government Procurement initiative needs to be monitored regularly to identify opportunities for ongoing improvements. This includes periodic and planned reviews. After specific period and based on collected information the Strategy should be updated and new objectives should be set forth.

The lack of legislation on e-procurement can negatively impact on the use of such systems, in Bangladesh, the current legislation on procurement are generally based on conventional systems. Aware of computer fraud and system insecurity, many possible suppliers can easily be deterred from participating in the process than subjecting themselves to a system which lacks legal backing in form of legislation and policy as this would be considered a big business risk.

Resistance to change by system users are likely to suffice and if not well managed can adversely affect the success of implementing this system in government departments. Motivational program may improve the situation.

CPTU should create a sustainable training system for procurement practitioners to ensure compliance, professionalism and career development. No online training tool (CD ROM, Animation, Video material, etc.) has been developed yet. Buyers are not trained yet to use the system. CPTU should train both procuring entities and supplier.

Internet connectivity of the country should be improved. As it is not possible to do overnight, bidders may be encouraged to submit tender at night. Also tender opening time may be spanned for any time of the day.

There are several Critical Factors for effective e-Procurement implementation in Public Sector (Vaidya, Sajeev & Callender 2006:82:88) and they are:

End-user training : e-Procurement introduces new technologies and changes in traditional procurement process, Training on procurement practices and the use of e-procurement tools is very important to the success of an e-Procurement initiative (WB, 2003) . It is the End-users who can recognize the benefits of e-GP system. But before that they need to understand the functionalities of e-GP system(CGEC, 2003). So training is a high priority, parallel public sector agencies should identify the skills required by all those involved in procurement (Callender and Matthews, 2000; Queensland Government, 2000; CIPFA, 2002).

The success of a public sector e-Procurement initiative depends on how the stake holders are using the new process and system. The new system must draw the end users to use e-Procurement system as their most favored way of purchasing goods and services(KPMG, 2001). The success also relies on interaction with the users (Birks et al., 2001). End-Users level of technology awareness and acceptance, and their willingness towards change of internal business processes of which they are accustomed for a long time is very much crucial to their support and interest to e-GP system. As the implementation process goes forth, time to time user satisfaction surveys may be helpful to identify the potential need for additional training and demonstrate the organization's interest in creating a positive online procurement experience (OSD, 2001)

Stakeholders Acceptance: ESI or early supplier involvement is an important stage in procurement process and has intimate relation to the success of effective e-GP implementation.. Proper demonstration of the system should be given to the stakeholders so

that discussions about changes, issues and various functionalities may take place. According to the OSD (2001) Feedback from suppliers allows to monitor and identify areas for improvement and change in advance. Suppliers will be unwilling to conduct business electronically with public sector agencies because they are unclear about the benefits that they will gain, they might see e-Procurement as a means by which public sector agencies will attempt to force down prices (CIPFA, 2002). Suppliers, therefore, should be educated on the e-Procurement benefits that can be provided to them. Suppliers are, of course, an integral part of e-Procurement and should be contacted and consulted as early as possible in the project. The degree to which the success of an e-Procurement initiative can be realized is directly related to the level of e-readiness of suppliers, and appropriate communication with suppliers is therefore important (AOT, 2003).

Compliance with best practices: Changes of business rules, through Championing and sponsorship from top-management is needed to get the planned benefits of e-Procurement. Specifically important in e-Procurement initiatives is the responsibility of ensuring “Buy In” (Birks et al., 2001). Implementation must be delivered in accordance with business case. Birks et al. (2001) suggest the business case processes for e-Procurement should include: identifying drivers, understanding the starting point, benefits, approaches, affordability, risks and benefit realization. Procurement in the public sector has some differences to procurement in the private sector, especially in terms of transparency, accountability and probity. The CIPFA Report (2002) cautions that private sector solutions do not easily adapt to a public sector setting and e-Procurement solutions which work successfully in a private sector setting may fail within the public sector.

System integration, security and authentication: Because of the sensitivity of the government data and the legal nature of orders and payments, security of data is very critical in e-Procurement systems. It is also important for the system to have mechanisms for identifying and authenticating the user who places an order so that the supplier knows it is safe to fulfill the order. In e-Procurement, Birks et al. (2001) relate the security requirements at the e-Tendering stage to authentication and argue that e-Purchasing systems and processes need protection because they involve a financial transaction and maybe vulnerable to a fraudulent attack. S&A (2003) supports this notion by saying that transactions between different systems

need to be exchanged in secure ways with assurances regarding the identities of the buyers and suppliers. In order to encourage buyers and suppliers to engage in e-Procurement it is critical that both parties have confidence in the underlying security infrastructure

Use of performance measurement: The continuous measurement of the key benefits is vital to the successful delivery of the business case. Measurement drives behavior and is a key to making the change a success (Birks et al., 2001). Establishing goals and baselines is very important. According to CGEC (2003), a general lack of measurement capability provides the management with only limited tools and visibility for assessing organizational progress. It is important to define key performance indicators (KPIs) early in the process to enable successful benefits tracking and distil the business case into measurable KPIs which should be monitored throughout the project. This paper highlights some of the most important performance measures that can be derived from the implementation factors that are related to e-Procurement CSFs.

Top management support: There is little doubt that senior management leadership is critical to the success of an e-Procurement initiative implementation It is essential for guiding the strategy and direction of the initiative (AGV, 2003). The top management (steering committee) must involve the project manager and any consultants working with the committee to develop an implementation strategy (CIPFA, 2002). In this regard, considerable attention and support needs to be provided by senior management within the agencies involved, to ensure the profile and understanding of the importance of procurement and its reform is widely understood (S&A, 2003). Furthermore, the executive management team is responsible for setting the vision and goals, bringing about collective commitment for change in process and organizational structures, and formulating the policies and strategies necessary to put in place an e-Procurement program (WB, 2003).

Change management program: As changes required in supporting business processes are directly related to the speed of adoption of e-Procurement, change management issues become more substantial as the number of stakeholder groups and variety of stakeholder needs increase (CGEC, 2003). The OGC (2002) recommends that as more change in underlying processes requires more learning and effort on the part of users, more attention must be

given to change management issues including training and communication. According to the OGC Guide (OGC, 2003), the three ways to achieve successful change management for e-Procurement are: consultation, communication and issue resolution. While change management may be the least expensive aspect of an e-Procurement project, a lack of it can be a leading cause of project failure (WB, 2003).

e-Procurement implementation strategy: The creation of documented and executable strategies prior to the deployment of the e-Procurement solution is an important CSF, and much of the success of these types of the projects depends on developing a sound e-Procurement strategy (Neef, 2001). This notion is further supported by the OSD Report (2001) that as the procurement strategy is intended to provide a roadmap to savings enabled by the technology, e-Procurement should be procurement driven and technology driven. Therefore, a clearly defined e-Procurement strategy not only emphasizes the importance of e-Procurement in the public sector but takes into consideration major institutional changes from the procurement process perspective as well as from the organizational perspective (WB, 2003). Another report (DOF, 2001) notes that the e-Procurement strategy should be based on the introduction of sound procurement practices in line with international best practice, while taking account of the differences in requirements of the public and private sectors.

Communication standards: e-Procurement requires various buyer systems and various supplier systems to exchange information and electronic documents. This requires common standards. It seems that there is emerging agreement on the adoption of XML (eXtensible Markup Language) as the basis for standards (S&A, 2003). The XML standard defines the content in communication and in the selection of general data formats (KPMG, 2001). In defining the e-Procurement requirements, the key concern relates to the standard for formatting electronic catalogues (Birks et Al., 2001). A World Bank Report (2003) further argues that the e-Procurement system should be developed in an open environment which not only allows it to link to other systems for interoperability, but also offers the option of scaling the system up whenever the workload increases. According to the DOF (2001), successful introduction and adoption of e-Procurement in the public sector is also dependent

on the ease with which procurement-related data can be exchanged both within the public sector and between its supply base.

2.4 Benefits of e-GP

The existing literature has identified the various benefits of using public e-procurement in the public sector. Some of the benefits are as follows:

- E-procurement can centralize data in order to improve audit and analysis (Gupta, Jha & Gupta, 2009).
- E-procurement eliminates the direct human interaction on bidding and other work and services, corruption is decreased significantly, and internal efficiency increase in government departments (Ndou, 2004).
- From an e-procurement system, government can monitor all the works and services more easily and efficiently (Aman & Kasimin, 2011; Kaliannan & Awang, 2009).
- E-procurement system provides better status monitoring and tracking of applications.
- It increases transparency in works and services and improves better interaction between supplier and vendors and citizens through online system (Adebiyi, Ayo & Adebiyi Marion, 2010).
- Online bidding system automatically reduces the cartel, collusion and rigging among the bidders (Pathak et al., 2006)

Kalakota and Robinson (2000) have identified benefits in cost saving, improved efficiency and control, and consequently, these are the three catalysts for driving the growth in the e-procurement. The public sector characterized by high purchasing volume, maverick buying and the lack of transparency stands to benefit significantly from e-procurement. The private sector driven by the desire to maintain competitive advantage and by the need to maintain profitability has taken rapid strides in using e-procurement (Krysiak et al. 2003).

Knut Leipold, World Bank in June 2007 described the benefits of e-GP as:

Development Impact

Breaking down the physical barriers of space and time, e-GP allows a more transparent and efficient information flow as well as improved access to information and services. Beneficiaries include not only governments and suppliers but also the public at large in having access to transparent information on the public expenditure of taxpayers' money.

E-GP facilitates higher quality outcomes for public procurement through improved accessibility and interoperability, which enable:

- Greater business access and competition for government expenditure (creating commercial benefits for business and price and quality gains for government);
- Integration and automation of many workflow processes for transactions and other supply chain management activities improving efficiency and reducing processing costs; and
- greater and easier access to real time and historic information for management and audit (enabling higher quality decision making and planning as well as greater transparency and accountability).

The implementation of e-GP offers the opportunity of adding value to the relationship between government buyers and private businesses. An effective e-GP program can deliver a broad range of benefits to taxpayers, the economy and the community generally. Online technology provides the potential to significantly reform the accountabilities and performance of public procurement systems. (Leipold 2007, ¶1:5)

Enhanced Transparency & Compliance

At an early stage, e-GP can provide access to a whole range of public procurement information at low cost and independently of time and location. Governments achieve a high level of transparency if they use the Internet for the free disclosure and distribution of public procurement information. Such information typically include the relevant legislation, policies and guidelines, procurement plans and notices, bidding documents, minutes of procurement activities, and contract award results. In reducing the asymmetry of public procurement

information, e-GP contributes to increasing the competition in terms of quantity (participation) and quality (openness and fairness).

The application of online technologies can ensure compliance with the existing procurement policy and legislation. An e-GP system can automate the required procurement procedures thus allowing neither purchasing agencies nor bidders to deviate from the public procurement process. In this way, e-GP helps governments to reduce the opportunities for corruptive practices.

While enhanced compliance contributes to avoiding corruption and fraud, the transparency of real time procurement information allows the early detection of corruptive and fraudulent activities. In addition, e-GP contributes to reducing corruption and fraud by conducting the procurement process online and collecting all procurement data into a securely operated electronic system. Consequently, in-person contacts between purchasing agencies and bidders are no longer required, the risk of manipulating procurement information and documents can be minimized, and the availability and completeness of public procurement audit trails can be improved. (Leipold 2007, ¶:8)

Increased Performance & Quality

The benefits of online technology for the efficiency and effectiveness of government operations reflect the impact of e-GP on the cost of transactions and value-for-money outcomes. Typically, countries report efficiency gains from 10 to 20 % of the total volume procured through electronic means resulting from the reduction of transaction costs and prices.

The potential impact of e-GP on the cost of transactions is linked to savings that are related only to workflow and include significant savings in time due to the automation of the procurement procedures for both sides - purchasers and bidders. The fact that bidders do not have to travel any more to submit a bid in paper, does not only prevent physical attacks on bidders on their way to submit the paper bid, but also saves bidders a lot of time. Transaction costs of the public procurement process drop considerably by using the less expensive

Internet rather than print media as public procurement information channel and reducing paperwork in general.

Price reductions can be achieved as a result of three intrinsic e-GP features: price transparency, stimulation of competition, and innovative public procurement procedures. Price transparency by disclosing contract award results online has reportedly avoided the conclusion of overpriced public contracts and contributed to adjusting prices for goods, works, or services in line with true market price levels. The online publication of procurement notices provides an effective tool to reach out to private businesses in the market thus increasing the participation in public procurement. To this end, increased competition contributes to reducing the prices paid by the government. Innovative approaches in the area of public procurement include the managed aggregation of demand and electronic reverse auctions, when lower prices can be attributed to aggregated purchases and to online negotiation respectively. (Leipold 2007, ¶:11)

In addition to the measurable outcomes, e-GP can be expected to provide significant but less quantifiable benefits through greatly improved management information and analysis. Currently, most large government organizations will have only limited insights into the wealth of public procurement information scattered around in multiple data formats and different archives and places. The application of digital technology for procurement information disclosure and transactions lays the foundation for the collection of those data, which provide the basis for performance measuring and monitoring. Besides the safekeeping of public procurement information and data, e-GP ensures a much higher quality of public procurement reporting and decision-making. (Leipold 2007, ¶:14)

Economic Development

The level of transparency, compliance, performance, and quality of public procurement due to the application of e-GP can achieve a dimension, which does not only provide for the development of a public procurement system that meets internationally recognized standards but also establishes the basis for a sound market economy with significant gains in productivity and competitiveness.

The efficiency gains due to the application of e-GP can have a clear economic impact. The total public procurement volume of a national economy typically counts for 10 to 20% of the GDP. Procuring only 10% of all public purchases through electronic means with a moderate 10% in price and cost reductions would result in total annual savings equal to one percent of the GDP.

With government accounting for a substantial proportion of the economy, the speed of take-up of technology by the economy will be significantly influenced by the rate of government adoption. To this end, e-GP catalyzes e-commerce and encourages the participation of small and medium enterprises, promotes the use of modern technology and the implementation of a national technological infrastructure, and supports the development of appropriate capacity and skills with the overall objective of economic growth and development. Only governments and suppliers but also the public at large in having access to transparent information on the public expenditure of taxpayers' money. (Leipold 2007, ¶:17)

2.5 Summary of Literature Review

Electronic Government procurement (e-GP) is the application of ICT in the public procurement process. e-GP Bangladesh Government introduced e-GP system for its procurement on 2011. This e-GP system in Bangladesh is web based portal through which government agencies from all over the country can perform procurement activities via internet. It contains several modules for APP publication, Tender invitation, Tender doc preparation, Contract awarding, Contract Management etc. Before starting of e-GP readiness assessment report shows that Bangladesh has moderate level of readiness in different components (e-GP initiative,, standards, infrastructure, legislation, regulation etc.). Bangladesh Water Development Board started using as a target agency from the very beginning of e-GP initiative. Now it's performing all of its procurement activities through e-GP system.

There are several challenges and success factors for implementing an e-GP initiative such as, interest and competency of the users in using the system, bugs and problems occurring in the

run time, security measures, logistic and infrastructural facilities, stakeholder acceptance, awareness and support, compliance to procurement rules, change management program and e-Procurement implementation strategy. e-GP has promising benefits. Existing literatures shows e-GP can enhance transparency & compliance in procurement process. It can increase efficiency and effectiveness of procurement process. These potential benefits will reflect the main goal of the government ie economic development.

CHAPTER THREE



Methodology

Introduction

This study is an exploratory one and uses qualitative and quantitative data. The study adopts a purposive sampling technique to attain the research objectives while looking at the performance of e-GP in BWDB.

3.1 Data Source

The study used both primary and secondary sources of necessary data and information. Primary data (qualitative) has been collected by in-person interviews, surveys computerized questionnaires from the e-GP users working in field and project offices of BWDB. The researcher has talked to the participants about their experience, perceptions and problems regarding the e-Government Procurement System. After the exchange of general idea of the research objectives, the questionnaire was given to them. They were requested to fill the questionnaire based on the practical experience they had regarding the e-GP portal.

Secondary data includes printed / unprinted materials, internet information, published reports etc. Survey results (questionnaire, Focus group discussion) have been arranged for validation of data and information.

3.2 Study area, Population and population size

The study area covered the PE's (Procuring Entity) and high officials of Bangladesh Water Development Board who uses the e-GP (Electronic Government Procurement) system. The research intends to conduct a survey among selected procuring divisions of Bangladesh Water Development board. Bangladesh Water Development Board has 291 e-GP users under its 84 regional and local offices in where e-GP is used for procurement. From this 84 offices, 78 are field divisions which operates under 22 Circle Offices and other 6 are Project offices. Those 22 circles operates under 9 Zones of BWDB and Project offices are under HQ office.

3.3 Sample size and Sampling technique

Wood and Haber (1998) defined the sampling as the process of selecting representative units of a population for the study in research investigation. A sample is a small proportion of a population selected for observation and analysis. The sampling type and technique used was purposive, clustered and random. Respondents are selected such a way that 22 circle offices and 9 zones has at least one respondent. 1 field division and other 6 offices will be selected from where respondents (1/2 from procuring entity 1 from Contractor/consultant) were selected.

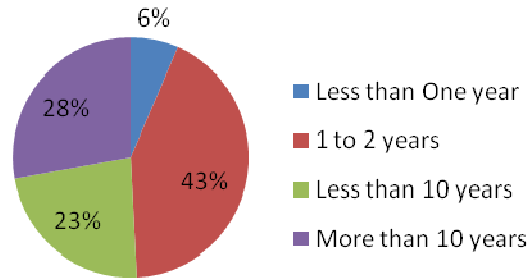
Respondents of BWDB using the e-GP portal has been selected as research sample since this research focuses users satisfaction level and perceptions regarding e-Government Procurement.

The sample size for this study is 61 as the scope and time frame of the study was limited. Employees having different Procurement Roles from the Sub-divisional engineer up to the Chief engineer of the organization are considered as decision making body for procurements. There are about 291 e-GP users in BWDB and hence the population size is considered as 291. A sample of 61 out of 291 means around 20.96 percent of the population, hence the sample can be considered statistically significant.

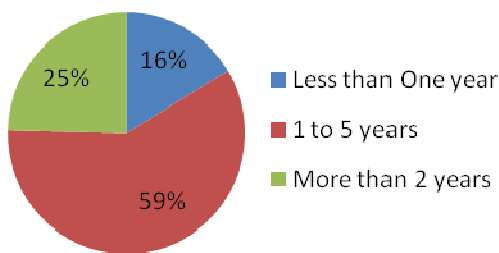
3.3 Sample Characteristics

Respondents have different range of experienced in public procurement and e-GP system. most of them are very familiar with e-GP and public procurement of BWDB. All of the respondents have experience of using e-GP portal either as registered or non-registered user. Among 61 respondents there are no Superintending Engineers, and then there are 20 Executive Engineers, 41 Sub-Divisional Engineers/Assistant Engineers. Their type and experience in public procurement are shown in figure below:

Experience in public procurement?



Experience in e-GP



Type of Respondents

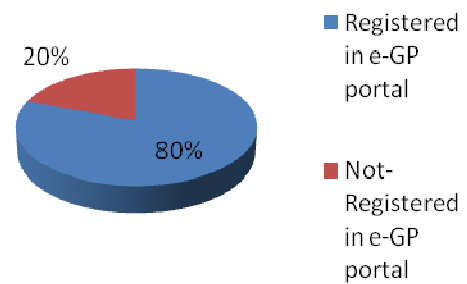


FIGURE NO-3.1: Overview of respondents of the study

3.4 Methods of Collecting Data

The study is designed to explore the overall user satisfaction and perception of e-GP users in BWDB and identify the scope of improvements. To reach the said purpose/objectives, the study used qualitative research model which was mainly based on primary data and some secondary sources were also used.

The main methodology of the research was Questionnaire survey. Also several in –depth interview was taken. , Some real life case studies were also used to realize the practical scenario

3.4.1 Questionnaire survey

Questionnaire was developed to assess e-GP portals system, information and service quality along with user’s satisfaction level. Also some questions reflect the benefits of–e-GP. . Respondents were selected randomly, and they were requested for their response.

The questionnaire included three parts. These parts are general information of the respondents, opinions regarding e-GP portal and their recommendations for any improvement needed. Seven questions were prepared asking for general information about respondents such as the name, designation, work experience and procurement experience. Second part of questionnaire consists of 22 questions related to e-GP portals considering benefits, information, system, service and satisfaction. Third part of questionnaire consists of respondent's opinion about problems and potential improvements of e-GP portal. (The questionnaire is included in ANNEXURE -A).

3.4.2 in Depth Interviews

Several respondents who are involved in monitoring, performance measurement and implementation of e-GP portal were interviewed. Respondents include PMC of BWDB and several high officials, officials from CPTU and e-GP portal development consultant firm. Interview questions focused mainly on the performance, maintenance support and future of e-GP system.

3.4.3 Case study

For making this research more persuasive, some case study was also analyzed to get a clearer picture of the existing scenario in BWDB. A detailed explanation and analysis for those cases is prepared by interviewing concerned Office heads of BWDB.

3.5 Analysis tools used

Collected data have been cleaned, edited, and re-arranged for analysis and drawing a conclusion. Microsoft Excel has been used for cleaning data and preparing tables; for calculation and for constructing pie charts. Microsoft Word has been used for preparing the report. SPSS has been used for statistical analysis.

CHAPTER FOUR



Data Analysis

This chapter analyzes the collected data using the methodology previously explained in chapter Three. As mentioned in Chapter Three data has been collected through questionnaire survey. Hence the statistical analysis was done focusing on the data accumulated through survey questionnaire. The data is presented in graphical form for easy understanding. The interpretation of the data has also been presented in this chapter. Responses of in-depth interview were presented by extracting key opinions.

4.1 Overview of the survey questionnaire

To get the perception of the respondents regarding the e-Government Procurement System 26 Likert type questions have been asked. Several questions are set on each parameter of the study. List of the questions reflecting parameters are given below:

Parameters	Question no
System	09, 13, 14
Information	10, 11, 12
Service	15, 16, 17
User Satisfaction	33, 34, 35
Benifits	18-27

Table 4.1: Questions reflecting parameters

The respondents was asked to give their perception to the statements on a scale of Strongly Agree/ Agree/Neutral/Disagree/Strongly Disagree. Their opinions has been later coded with 5 for 'Strongly Agree, 4 for 'Agree', 3 for 'Neutral', 2 for 'disagree', 1 for 'Strongly Disagree'. The scale refers to the respondent's opinion towards the statements as following:

- Strongly Agree : Respondents have full confidence to the statement and no more expectations from the system.
- Agree : Respondents have full confidence to the statement and have some expectations from the system but not that much necessary.
- Neutral : Respondents are unsure about the statement.
- Disagree : Respondents don't have confidence to the statement and the have more expectations from the system which should be fulfilled.
- Strongly Disagree : Respondents don't have confidence to the statement and the have expectations from the system which must be fulfilled in order to continue the use of e-GP system.

Distribution of responses and percentage of responses for these questions are presented in D with Mean, Mode, and Standard deviation.

4.2 Questions & Responses

Survey questionnaire of this study had 38 questions. Question No. 1 to 08 was about respondent’s demographic details, their role and experience in procurement. Then the following 26 Questions (from No. 09 to 35) were asked about respondent’s level of agreement/disagreement regarding some statements which reflect their perceptions and experience about e-GP. Finally question No. 36 to 38 reflects user’s expectations and suggestions to improve the system. Summary of responses are given below.

Question-01: “Are you a registered user of e-GP in Bangladesh?”

Question-02: “Which one is your role or function regarding e-GP? (select multiple if applicable)”

Most of the respondents (Over 80%) were registered users of e-GP portal. Some of them are not. These non-registered users use the e-GP system for others who are not competent enough to access the system. Most of the users have multiple procurement roles in e-GP. Summary of users and their roles are given below.

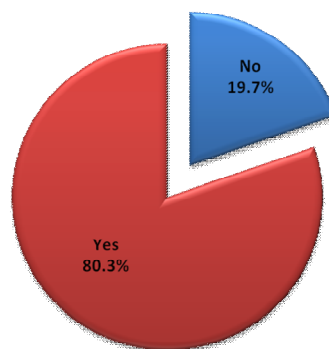


Figure 4.1 : Registered and Non-registered user of e-GP system

Role	No. or Respondents
Authorized Officer	1
Approving Authority	11
Procuring Entity	18
TOC/POC Member	59
TEC/PEC Member	53

Question-03: “Do you have training on procurement?

(if yes then please specify the number of days)”

Question-04: “Do you have training on e-Government(e-GP) procurement?

(if yes then please specify the number of days)”

Most of the respondents had training in either public procurement or e-Government procurement. About half of them had training on both. A summary of respondents training data is given below.

		e-GP		
		Trained in	No	Yes
Public Procurement	No	11	10	21
	Yes	15	25	40
	Total	26	35	61

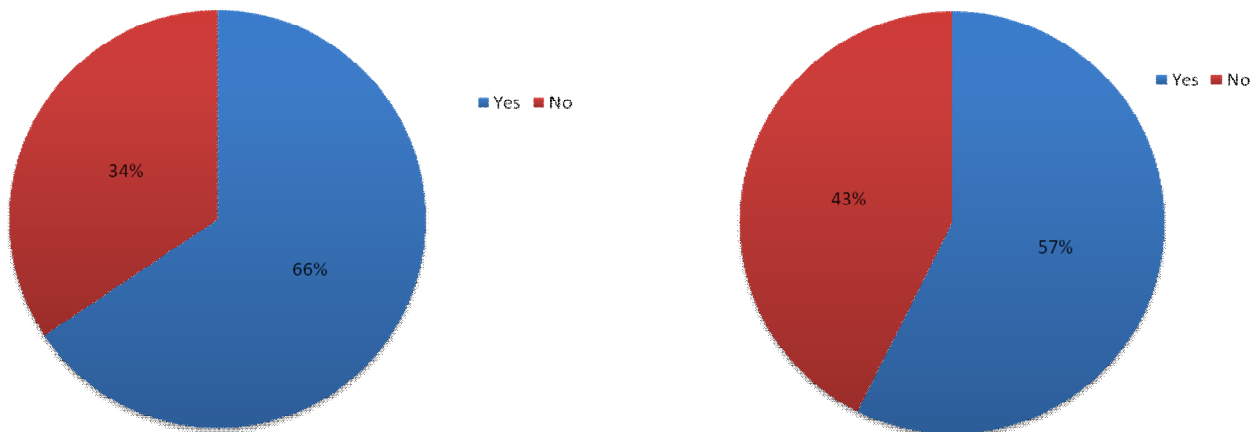


Figure 4.2: Respondents Trained in Public (Left) and e-Government Procurement(Right).

Question-05: "How long are you working in public procurement?"

(Mention years)"

Question-06: "How long are you using e-GP?"

(Mention years)"

Question-07: "Approximately how many tenders have you invited/prepared through e-GP system?"

Question-08: "On an average how many Suppliers participated in each tender?"

Respondents were well experienced in public procurement and using e-Gp system for long time. They came with various level of experience. The graph below shows the various experience levels of the respondents.

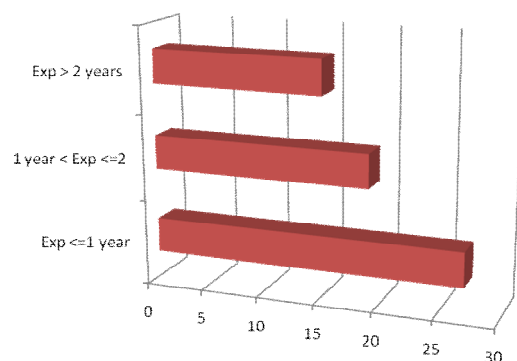
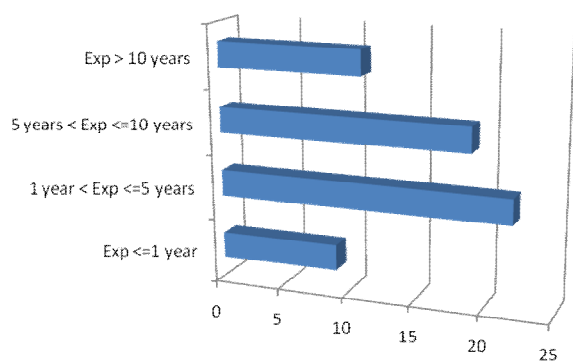
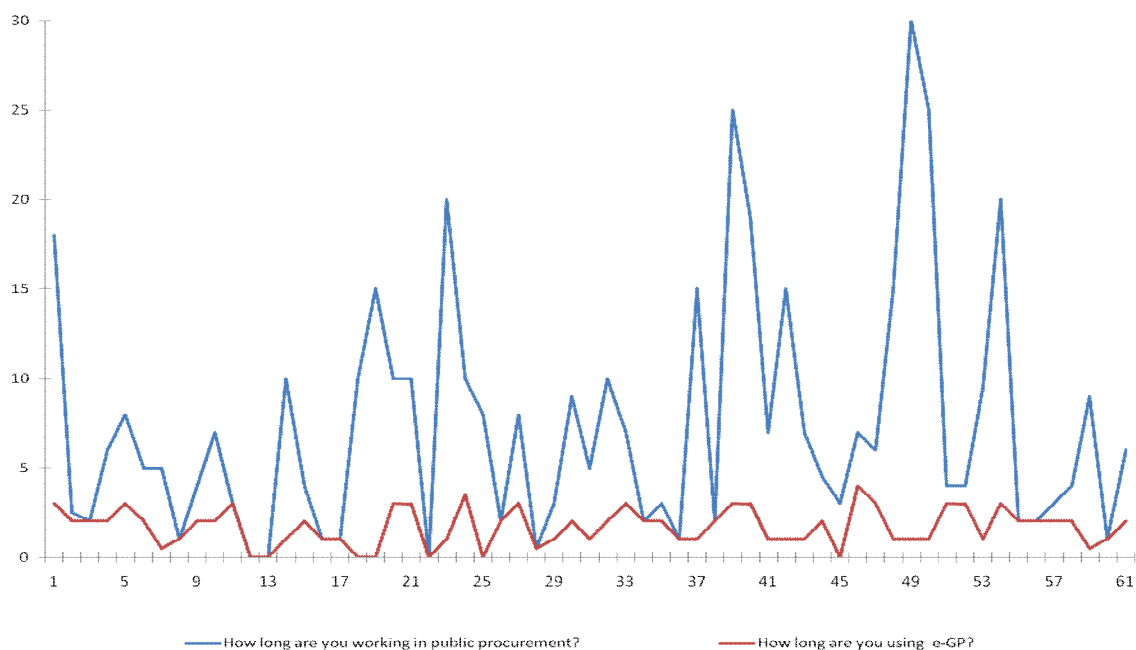
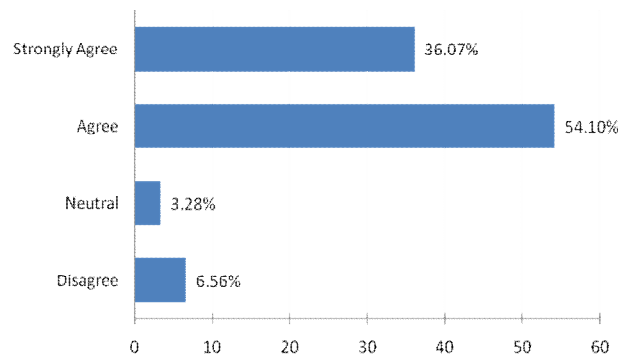


Figure 4.3: Comparison between experience in public procurement and e-Government Procurement

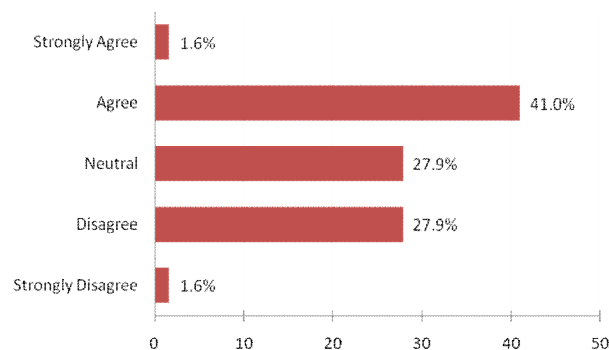
Question-09: "Its easy and convenient to use the e-GP systems"

This question was asked to assess how users found the interface and workflow of the e-GP system. In response to this statement, 36.07% respondents 'Strongly agreed' and 54.1% of the respondents 'agreed' with the statement. 3.28% of the respondents were 'neutral', and 6.56% 'disagreed'.



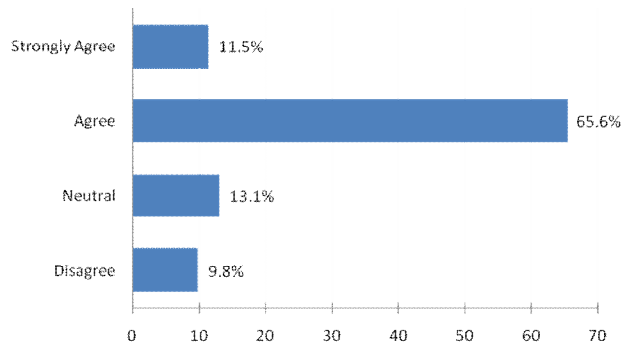
Question-10: "The Information of the e-GP system is complete"

About half of the respondents expressed the information provided by the e-GP System as complete by responding "Strongly Agreed" (41.0%) and "Agreed" (1.6%). 27.9% of the respondents responded as 'Neutral with the statement. 27.9% 'disagreed' and 1.6% 'strongly disagreed'.



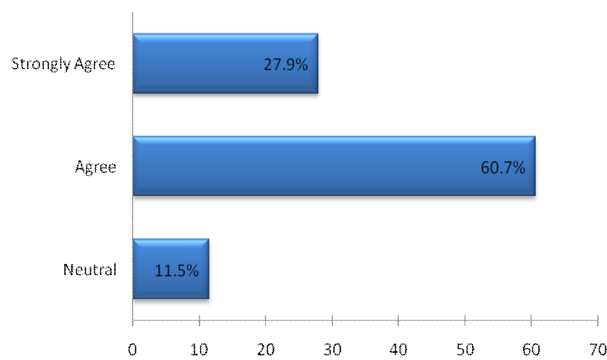
Question-11: "The Information of the e-GP system is accurate"

65.6% respondents with the statement -'Agreed' and 11.5% Strongly agreed with this statement. 13.1% remained as "Neutral" and 9.8% 'Disagreed' none 'strongly disagreed'.



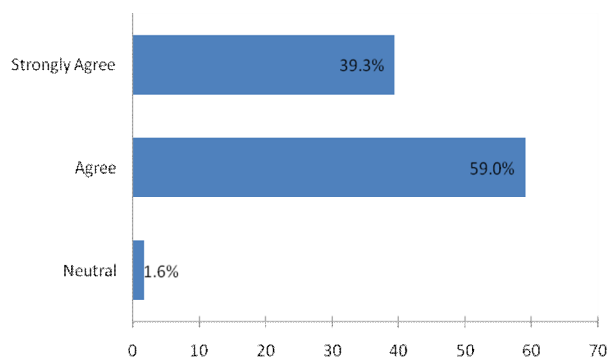
Question-12: "The Information of the e-GP system is secure"

Respondents perceive e-GP System as a secure one by 'Strongly agreed' (27.9%) and "Agreed" (60.7%) with the statement. Other 11.5% was 'Neutral'. None "Disagreed" or "Strongly Disagreed"



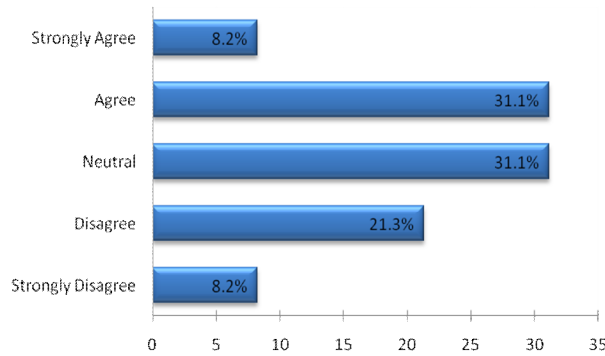
Question-13: "The e-GP system is reliable"

About e-GP systems reliability, 39.3% respondents 'Strongly agreed' and 59.0% of the respondents 'Agreed' with the statement. Only 1.6% responded as 'Neutral'. None "Disagreed" or "Strongly Disagreed"



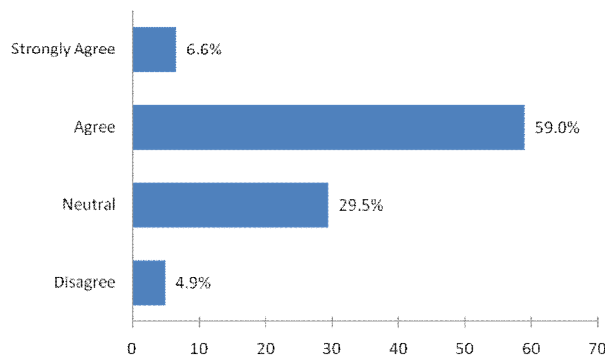
Question-14: “The e-GP system is open to customization/modification”

There was a mixed opinion about e-GP systems openness to Customization/modification. 8.2% respondents ‘Strongly agreed’, 31.1% ‘Agreed’, 31.1% was ‘Neutral’, 21.3% ‘disagreed’ and 8.2 % ‘strongly disagreed’.



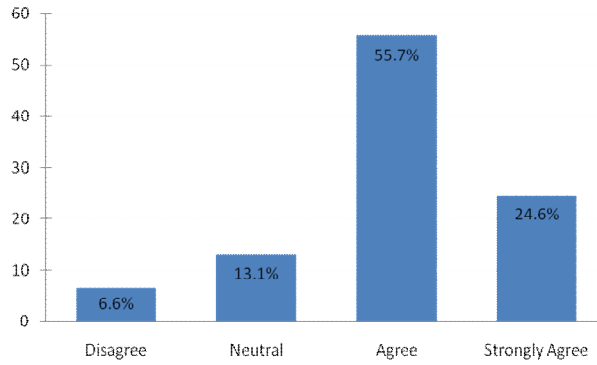
Question-15: “The Online Support/Helpdesk services e-GP system is good”

In response to this statement, 6.6% respondents ‘Strongly agreed’ and 59.0% of the respondents ‘agreed’. 29.5% were ‘neutral’, and 4.9% ‘disagreed’. None ‘strongly disagreed’.



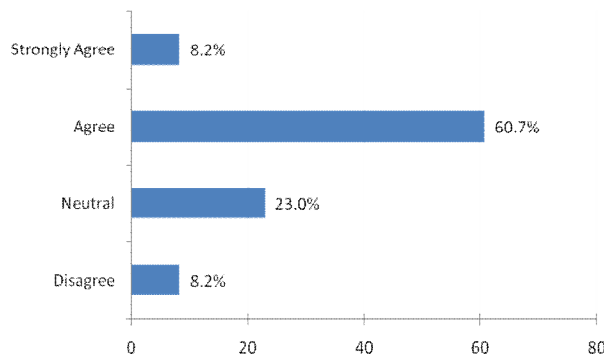
Question-16: “The support provided by BWDB e-GP cell for e-GP system is adequate”

In response to this statement, 62.3% respondents ‘Strongly agreed’ and 37.7% of the respondents ‘agreed’ with the statement. No respondent perceived this as ‘neutral’, ‘disagreed’ or ‘strongly disagreed’.



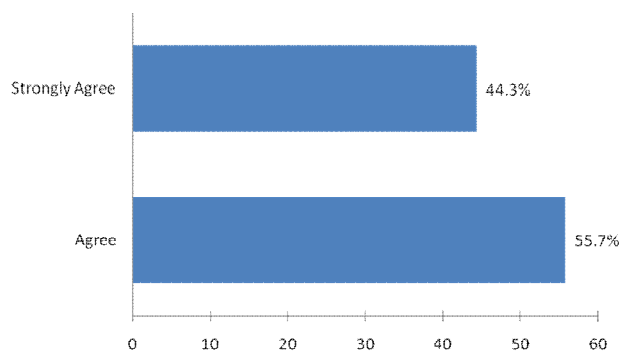
Question-17: "The Regulation and support by CPTU for e-GP system is adequate"

8.2% respondents 'Strongly agreed', 60.7% of the respondents 'agreed' with the statement. 23.0% were 'Neutral', 8.2% 'disagreed' and none 'strongly disagreed'.



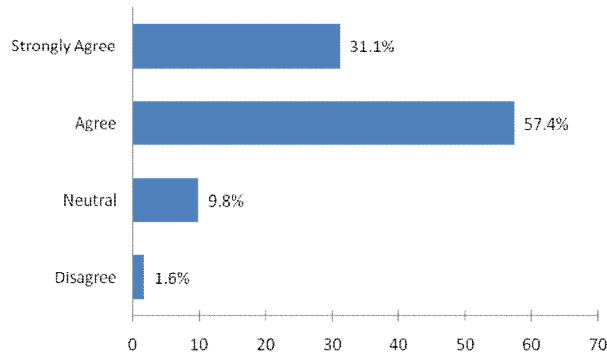
Question-18: "The use of e-GP system makes procurement processes easier"

Respondents seemed to have full confidence in this statement, 44.3% respondents 'Strongly agreed' and 55.7% of the respondents 'agreed' with the statement. No respondent response was received as 'neutral', 'disagreed' or 'Strongly disagreed'.



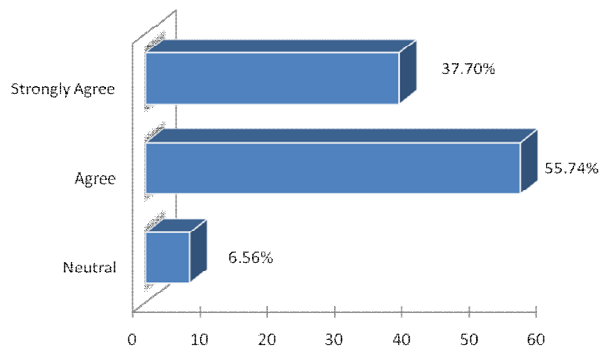
Question-19: “The use of e-GP system reduces the time of procurement cycle”

31.1% respondents ‘Strongly agreed’ and 57.4% of the respondents ‘agreed’ with the statement. There were some responses as ‘neutral’(9.8%) and ‘disagreed’(1.6%).



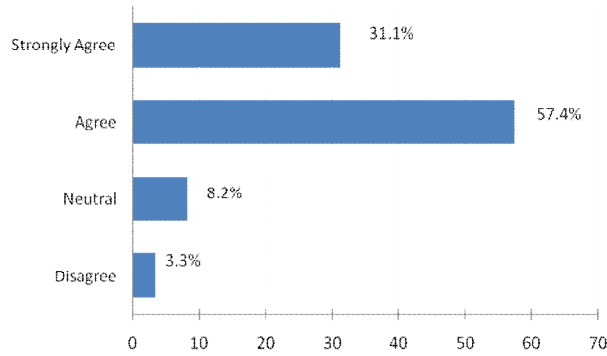
Question-20: “The use of e-GP system improves procurement performance (efficiency & effectiveness)”

37.7% respondents ‘strongly agreed’ and 55.74% of the respondents ‘agreed’ with this statement. 5.56% responded as ‘neutral’. None ‘disagreed’ or ‘strongly disagreed’.



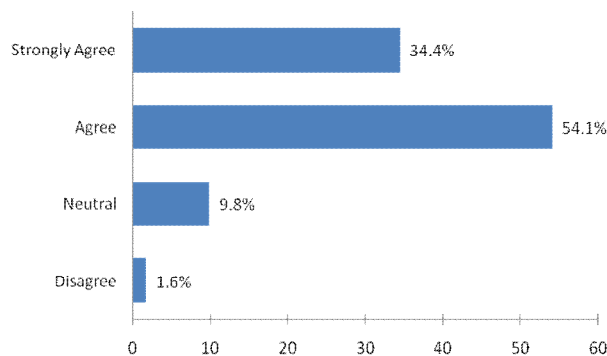
Question-21: “The use of e-GP system makes Decision making faster”

31.1% respondents ‘strongly agreed’ and 57.4% of the respondents ‘agreed’ with the statement, 8.2% responded as ‘neutral’ and 3.3% ‘disagreed’.



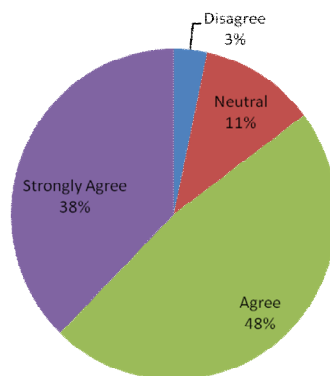
Question-22: “The use of e-GP system improves compliance to the procurement rules”

In response to this statement, 62.3% respondents ‘strongly agreed’ and 37.7% of the respondents ‘agreed’ with the statement. No respondent perceived as ‘neutral’, ‘disagreed’ or ‘strongly disagreed’.



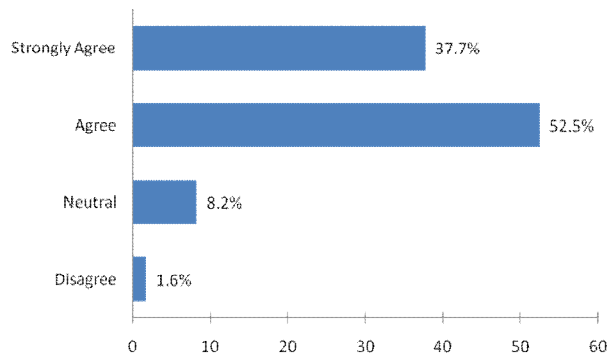
Question-23: “The use of e-GP system improves Performance monitoring capability”

Respondents seems to have positive perception to this statement as 38.0% ‘strongly agreed’ and 48.0% of the respondents ‘agreed’ with the statement. 11% responded as ‘neutral’, and only 3% ‘disagreed’.



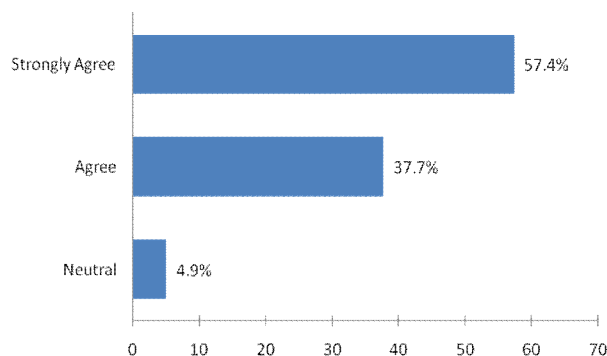
Question-24: “The use of e-GP system ensures competition”

Most of the respondents expressed that e-GP system can ensure competition. 37.7% respondents ‘strongly agreed’ and 52.5% of the respondents ‘agreed’ with the statement. Only 8.2% was ‘neutral’ and 1.6% ‘disagreed’.



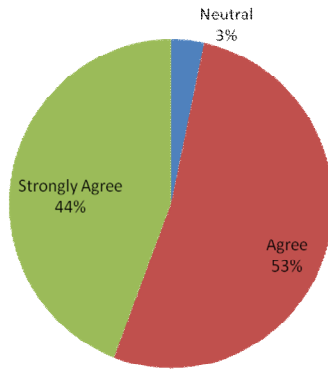
Question-25: “The use of e-GP system is helpful to reduce corruption”

E-GP system can be a major tool to reduce corruption as 57.4% respondents ‘Strongly agreed’ and 37.7% ‘agreed’ with this statement. Only 4.9% was ‘neutral.’ No response was found as ‘disagreed’ or ‘strongly disagreed’.



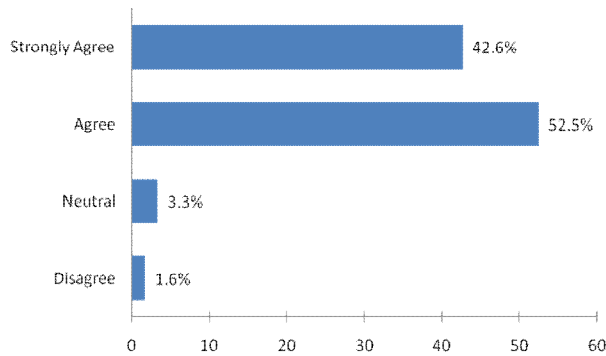
Question-26: “The use of e-GP system is helpful to reduce Coercion”

Again respondents express positive effect of e-GP system as 44% respondents replied ‘strongly agreed’ and 53% respondents ‘agreed’ with this statement. Only 3% were ‘neutral’. None ‘disagreed’ or ‘strongly disagreed’.



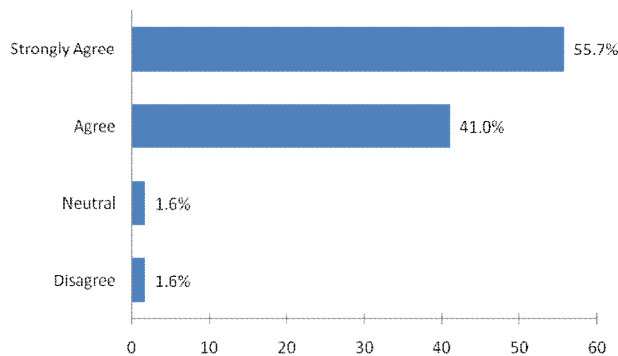
Question-27: "The use of e-GP system is helpful to reduce fraudulent practice"

42.6% respondents 'strongly agreed' and 52.5% of the respondents 'agreed' with this statement, while 3.3% were 'neutral' and none 'disagreed' or 'strongly disagreed'.



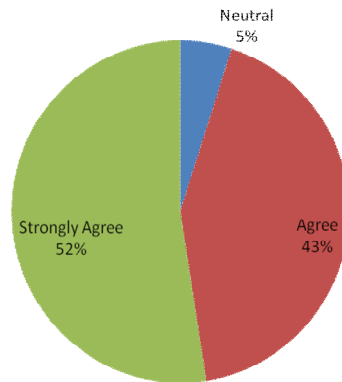
Question-28: "The e-GP system is Transparent"

e-GP systems seems to be treated as transparent as 55.7% and 41.0% respondents 'strongly agreed' and 'agreed' respectively with this statement. Only few responded as 'neutral'(1.6%), or 'disagreed' (1.6%).



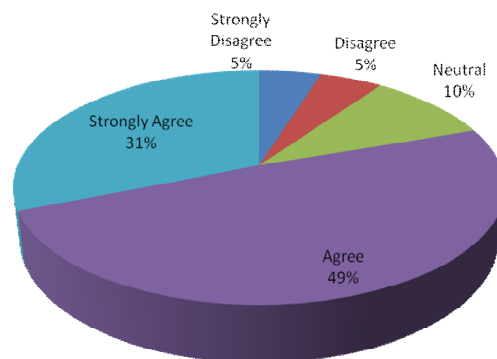
Question-29: "The e-GP system is more accountable"

In response to this statement, 52.0% respondents 'strongly agreed' and 43.0% 'agreed' with the statement. 5% was 'neutral'. None 'disagreed' or 'strongly disagreed'.



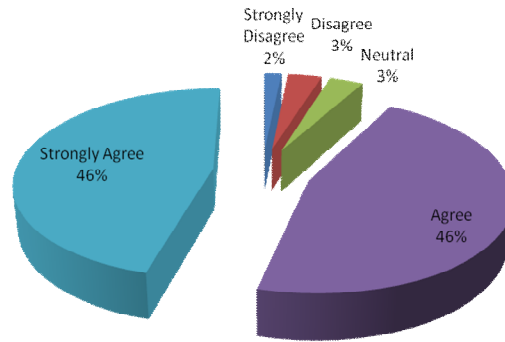
Question-30: "The e-GP system should be accessible from smart phones?"

31% respondents 'strongly agreed' and 49% 'agreed' with the statement; while 10% was 'neutral', 5% 'disagreed' and 5% 'strongly disagreed'.



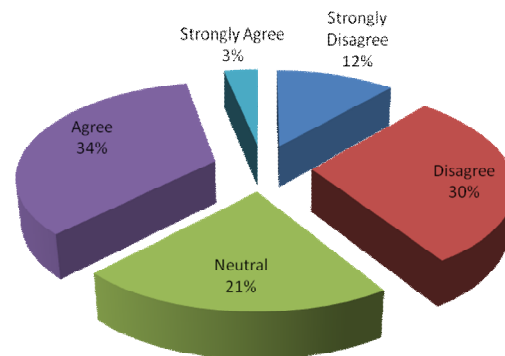
Question-31: "Power interruption and failure is one of the major Problem for e-GP Operation"

Above 90% of the respondents thinks power failure as a major problem for e-GP operation as 46% respondents 'strongly agree' and 'agreed' each with this statement. Only 3% was 'neutral' and 'disagreed' each and 2% 'strongly disagreed'.



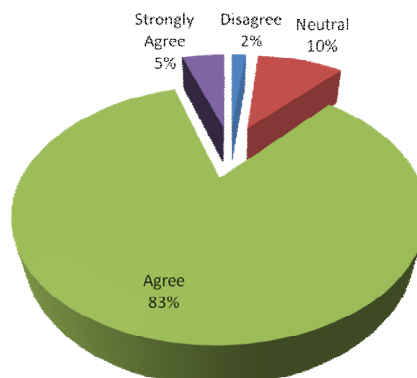
Question-32: “Your office has adequate hardware and internet support for e-GP Operation”

Mixed opinion was found regarding this statement. 3% respondents ‘strongly agreed’, 34% ‘agreed’, 21% reported as ‘neutral’, 30% ‘disagreed’ and 12% ‘strongly disagreed’.



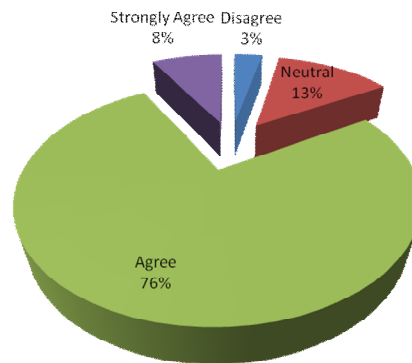
Question-33: “Are you satisfied with the functions of e-GP system”

Most of the respondents were found to be satisfied with functions of e-GP system as 5% ‘strongly agreed’ and 83% ‘agreed’ with this statement. 10% were ‘neutral’ and 2% ‘disagreed’. None ‘strongly disagreed’ with the statement.



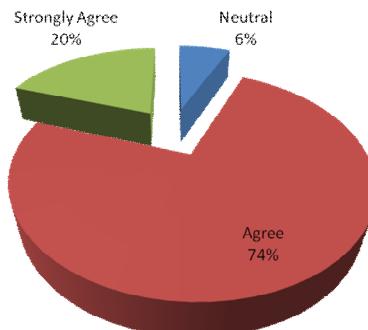
Question-34: "Are you satisfied with the Information of e-GP system"

In response to this statement, 8% respondents 'strongly agreed' and 76% 'agreed'. 13% reported as 'neutral' and 3% 'disagreed'. None 'strongly disagreed'.



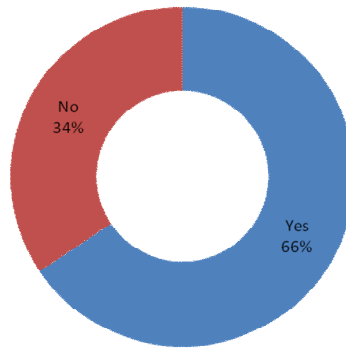
Question-35: "Are you satisfied with the overall use of e-GP system"

Users seem to be satisfied as 20% respondents 'Strongly agreed' and 74% respondents 'agreed' with the statement. 6% was 'neutral'. None 'disagreed' or 'strongly disagreed'.



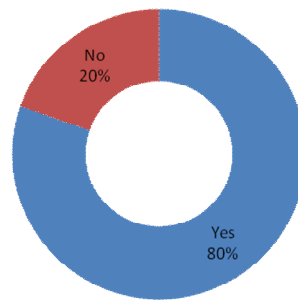
Question-36: "Are the reports generated by e-GP system adequate for BWDB? (if No, please recommend reports those need to be incorporated)"

66% respondents think reports generated by e-GP system is enough. While remaining 34% thinks it needs some modifications.



Question-37: “Do you think the Top management support regarding e-GP system is adequate? If No, please recommend some steps”

80% respondents think BWDB has adequate Top-Management support regarding e-GP. 20% disagreed and had the following recommendations to make it better.



- Top Management should be well briefed and trained
- Top management should know the problems that end users are facing
- More support needed from Top management
- At least one member of CPC cell regarding eGP should be provide in each zonal office
- More training about e-GP system both official and contractor also needed. Training and link of audit also need in e-GP system for Audit department.

Question-38: “Do You have any suggestions for the improvement of e-GP system?”

Respondents provided several suggestions to improve the e-GP system. These suggestions include server up gradations, software customization, process simplification, training need, infrastructural obstacles. Summary of the suggestions are listed below:

- Server Speed should be improved it has a very slow response time and browser issue should be removed.
- Infrastructure Development should be ensured
- Excessive layering should be removed from evaluation reports
- Certificate verification is required
- Responsiveness criteria and pre/post qualification criteria should be more specific in the e-GP system.
- All stakeholder of the e-GP process need extensive training and knowledge sharing regarding the system.
- Billing system needed
- Automatic checking for similar nature and auto calculation of turnover
- Evaluation system should be simplified and detailed.
- Option for modifying some data(Estimate etc.) should be given through corrigendum
- Some interface are not compliant with PPR 2008, they should be aligned.

4.3 Analysis & Findings

4.3.1 Findings of Questionnaire Survey

A descriptive statistical analysis was done on the data found against the question no 09 to 35. The analysis report will be found in Appendix-B. As the data collected from the respondents for these questions is ordinal data, median and Inter-Quartile Range (IQR) of each item is considered as the measure of central tendency and dispersion. Key findings are listed in Table below:

TABLE 4.1: Key Findings From The Survey Questionnaire

No	Questions	Findings
09	Its easy and convenient to use the e-GP systems	Users indicated e-GP system is easy to use and it there is more to improved User Experience (Mdn=4, IQR=1)
10	The Information of the e-GP system is complete	Divided opinion found from users 27.9% Disagree, 27.9% Neutral and 41% Agree. (Mdn=3, IQR=2).
11	The Information of the e-GP system is accurate	Most Users indicate e-GP system provide accurate information (Mdn=4, IQR=0)
12	The Information of the e-GP system is secure	Most Users think e-GP system is secure. (Mdn=4, IQR=1)
13	The e-GP system is reliable	Most Users think e-GP system is reliable. (Mdn=4, IQR=1)
14	The e-GP system is open to customization/modification	Divided opinion found. 21.3.9% Disagree, 31.1% Neutral and 31.1% Agree. (Mdn=3, IQR=2).
15	The Online Support/Helpdesk services e-GP system is good	Most Users has good experience from online help desk though a good portion (29.5%) express neither good nor bad opinion. (Mdn=4, IQR=1)
16	The support provided by BWDB e-GP cell for e-GP system is adequate	Users are fully satisfied with the services provided by BWDB e-GP cell. (Mdn=4, IQR=0.50)
17	The Regulation and support by CPTU for e-GP system is adequate	Most Users express the regulation and and support from CPTU is adequate. (Mdn=4, IQR=1)
18	The use of e-GP system makes procurement processes easier	Most Users express that e-GP makes procurement process easier. (Mdn=4, IQR=1)
19	The use of e-GP system reduces the	Most Users thinks e-GP system reduced the

	time of procurement cycle	procurement life cycles. (Mdn=4, IQR=1)
20	The use of e-GP system improves procurement performance (efficiency & effectiveness)	Most Users thinks e-GP system has improved the procurement performance. (Mdn=4, IQR=1)
21	The use of e-GP system makes Decision making faster	Most Users finds e-GP system has improved decision making. (Mdn=4, IQR=1)
22	The use of e-GP system improves compliance to the procurement rules	Most Users express that e-GP system increases compliance to procurement rules. (Mdn=4, IQR=1)
23	The use of e-GP system improves Performance monitoring capability	Most Users express that e-GP system enhanced Performance monitoring capability. (Mdn=4, IQR=1)
24	The use of e-GP system ensures competition	Most Users express that e-GP system ensures competition. (Mdn=4, IQR=1)
25	The use of e-GP system is helpful to reduce corruption	Users identified that e-GP system can be a major contributor to reduce corruption. (Mdn=5, IQR=1)
26	The use of e-GP system is helpful to reduce Coercion	Most Users found e-GP system to be helpful to reduce coercion. (Mdn=4, IQR=1)
27	The use of e-GP system is helpful to reduce fraudulent practice	Most Users found e-GP system can prevent fraudulent practice. (Mdn=4, IQR=1)
28	The e-GP system is Transparent	Users has full confidence over the transparency of e-GP system. (Mdn=5, IQR=1)
29	The e-GP system is more accountable	Users found e-GP system as more accountable. (Mdn=5, IQR=1)
30	The e-GP system should be accessible from smart phones?	Most Users wants to access the e-GP system from smart phones. (Mdn=4, IQR=1)
31	Power interruption and failure is one of the major Problem for e-GP Operation	Most Users express that Power interruption and failure is one of the major Problem for e-GP Operation. (Mdn=4, IQR=1)
32	Your office has adequate hardware and internet support for e-GP Operation	Divided opinion found. 41.% express the lack of required infrastructure while about 38% express to have them. (Mdn=3, IQR=2).
33	You are satisfied with the functions of e-GP system	Users are satisfied with the available functionalities of e-GP system. (Mdn=4, IQR=0).
34	You are satisfied with the Information	Users are satisfied with the information available

	of e-GP system	from e-GP system. (Mdn=4, IQR=0).
35	You are satisfied with the overall use of e-GP system	Users are satisfied with the overall use of e-GP system. (Mdn=4, IQR=0).

Item means are listed below according to there category (information quality, system quality, service quality, user satisfaction, and perceived benefits) are listed in Table-4.2:

TABLE 4.2: Means Scores of the Key Findings

Parameter	Item Mean	Parameter Mean
System Quality		4.131
Its easy and convenient to use the e-GP systems	4.1967	
The e-GP system is reliable	4.3770	
The e-GP system is open to customization/modification	3.0984	
The e-GP system is Transparent	4.5082	
The e-GP system is more accountable	4.4754	
Information Quality		3.694
The Information of the e-GP system is complete	3.1311	
The Information of the e-GP system is accurate	3.7869	
The Information of the e-GP system is secure	4.1639	
Service Quality		3.781
The Online Support/Helpdesk services e-GP system is good	3.6721	
The support provided by BWDB e-GP cell for e-GP system is adequate	3.9836	
The Regulation and support by CPTU for e-GP system is adequate	3.6885	
Perceived Benifits		4.319
The use of e-GP system makes procurement processes easier	4.4426	
The use of e-GP system reduces the time of procurement cycle	4.1803	
The use of e-GP system improves procurement performance (efficiency & effectiveness)	4.3115	
The use of e-GP system makes Decision making faster	4.1639	
The use of e-GP system improves compliance to the procurement rules	4.2131	

The use of e-GP system improves Performance monitoring capability	4.1967	
The use of e-GP system ensures competition	4.2623	
The use of e-GP system is helpful to reduce corruption	4.5246	
The use of e-GP system is helpful to reduce Coercion	4.4098	
The use of e-GP system is helpful to reduce fraudulent practice	4.3607	
User Satisfaction		3.978
You are satisfied with the functions of e-GP system	3.9180	
You are satisfied with the Information of e-GP system	3.8852	
You are satisfied with the overall use of e-GP system	4.1311	

To find out if the results are statistically significant, Kruskal-Wallis Test was done by dividing the respondents in to two groups based on whether they have training in e-Government Procurement. The details mean ranks and P values are given in Appendix-F. Some items P values are listed in Table-4.3:

TABLE 4.3: P Values of the Findings

	Its easy and convenient to use the e-GP systems	The information of the e-GP system is complete	The support provided by BWDB e-GP cell for e-GP	The use of e-GP system improves procurement	The use of e-GP system ensures competition	Power interruption and failure is one of	You are satisfied with the overall use of e-GP
Chi-Square	2.951	.921	.252	8.963	.029	.003	.076
df	1	1	1	1	1	1	1
Asymp. Sig.	0.086	0.337	0.615	0.003	0.864	0.955	0.783

From the table-4.3, since all p-value \geq 0.05 we can assume that at the $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that there is no difference in the median test scores (and, hence, the mean test scores) among the two groups.

From Table 4.1 & 4.2 it can be clearly seen that users has confidence on the perceived benefits of e-GP system. Users perceives the system quality (ease of use, reliability, accountability, transparency) is as good except that it's not that much open for

customization/modification. Users believe that e-GP system is secured enough but they are not satisfied with the information e-GP system provides. Level of service was moderate according to the users. Lastly, key findings show that users of BWDB has moderate satisfaction level about e-GP system.

4.3.2 Findings from In Depth Interview

Several high officials from BWDB/CPTU and WB who are directly involved in e-GP performance monitoring, supervision, promotion were interviewed. Questions asked were focused on their realization and future cogitation about e-GP systems performance, functionality, support service and policy guidelines. Summary of the discussion with them are as following:

- The Application still has issues which need to be resolved on an emergency basis. There is lot options to improve like report generation, evaluation process, CMS(Contract Management) etc.
- Some of the business rule of e-GP system is not complaint with PPR which need correction. The e-GP Guidelines 2011 need some addition, alteration, and amendment.
- There needs infrastructural improvement to make e-GP process more convenient and smoother. CPTU has already started the improvement process. Also BWDB is providing its operating offices with necessary Hardware, software and Internet facilities.
- The bidders lack of knowledge, proper qualification and skills to participate in tenders through e-GP portal.
- Capacity Development process for PEs and Bidders are ongoing. BWDB has already trained about 200 of its official and 50 bidders on e-GP system. More training will be conducted in future.
- E-GP is becoming very popular to the Users from both and (PEs and Bidders) day by day. And they are accepting it cordially.
- The system needs some more time to get to its maturity level and to become fully stable.
- Procurement Monitoring of PEs had become more convenient and less time consuming through e-GP system.

4.3.3 Feedback of Case Studies

Several case studies were conducted during the survey and data collection. The purpose of the case studies was to portrait success/failure stories and the factors of such successes/failure for future reference. Feedback of the case studies are presented in the following paragraphs.

Case Study 1: Barguna O&M Division under southern Zone of BWDB invited 4 tenders of WMIP(Water Management Improvement Project) funded by World Bank in FY 2012-2013. The followed the conventional procedure. There was coercive pressure from the local hooligans, so they moved the tender contents to the WMIP head office in Dhaka. But unfortunately those hooligans tried to snatch the contents from the head office and resisted other bidders to participate. In those circumstances WB suggested to go for e-GP. Instructed by the PD WMIP the PE of Barguna O&M Division invited those tender through e-GP. There was no coercive problem or any kind of pressure later regarding those tenders.

Case Study 2: Dhaka O&M Division-1 invited its first e-Tender in FY 2011-12. Only one bidder participated in that tender. After issuing NOA the bidder didn't Accept NOA hence PE forfeited his Tender security and proposed for re-tender to the Approving Authority. Unfortunately there was no option for re-tender. As a result they had to cancel the tender and re-tender it manually.

Case Study 3 : Rangamati O&M invited some LTM e-Tenders in FY 2014-15. During tender preparation they selected wrong form for grand summary but the system did not alert them. As a result the price quoted by the bidders got double. They had to go through formal procedure to solve this problem and the time to solve the problem basically ruined the intention to invite LTM tenders. They expressed that any problem should be solved ASAP and system should show notification if any function has severe importance.

Case Study 4 : Bidders of Sylhet O&M Division, BWDB , Sylhet resisted invitation of tenders through e-GP system at the first pilot program(FY 2011-2012). They take it as a media of representing the bidder community of Sylhet negatively. But after having dialogue concerning officials of that division and Contract and Procurement Cell, BWDB they were refrained. Later they appreciated the e-GP system with cordial admiration.

Case Study 5 : Comilla O&M Division invited a LTM e-Tender in FY 2014-15. During issuing NOA it showed two bidders in the list. The problem occurred due to the reason that the clicked twice in the lottery button having slow response from the server. PE opinioned that it should show some message if some work is running behind.

4.3.4 Summary of findings

Analysis of questionnaire survey and In Depth interview responses and Case Studies reveal that users have significant positive perception towards e-GP system. Users opinioned that they had fair level of confidence on the system's reliability and transparency and. Users think e-GP system is not much open for customization of modification which is necessary to make e-procurement process more acceptable. procurement time of construction projects. Findings show that e-GP system need to provide information through customized reports according to the user need. Findings also show the support service quality is moderate specially from CPTU and the online service desk. Users have strong belief that e-GP has several potential benefits. e-procurement is making the procurement process easier and less time consuming. Also e-GP system is enhancing the efficiency of procurement process and compliance to the Public Procurement Rules. There had been some implementation challenges mostly in software level which needs closer attention. There is a lack of adequate hardware and internet service which should be taken care of through infrastructural development program. Several anomalies has been found between PPR 2008 and e-GP process flow which should be aligned. Both type of users who have or don't have training on e-GP system are moderately satisfied with the existing functionalities of e-GP system and have fair level of satisfaction on overall system.

CHAPTER FIVE



Conclusion and Recommendations

5.1 Conclusion

Electronic government procurement (e-GP) is one of the blazing issues in e-government at this moment in time, and certainly it needs more attention to ensure its success. The objectives of this study was to see how e-GP system is functioning in BWDB and find out the BWDB users perception about e-GP system along with their perceived satisfaction level and recommend.

Chapter Four shows that e-GP can be a prime candidate to ensure accountability and transparency in public procurement process. Users think e-GP system is reliable and can be a major tool against CFCC(Corruption, Collusion, Fraudulent, Coercion) practice in Public procurement process. Analysis shows e-GP system has shown its potential to enhance the efficiency and effectiveness of public procurement process and procurement performance monitoring. Also users have dissatisfaction/moderate level of satisfaction regarding customization/modification options of e-GP system, information and reports generated by the system and current functionalities. However the e-GP system has gained a fair level satisfaction regarding overall use of the system.

From the analysis and findings, it has emerged that despite of some implementation challenges, e-Government Procurement solutions has undoubtedly improved the procurement process in BWDB. Users have a positive attitude to e-Government Procurement system and they have cordially accepted this new process. e-GP has shown the potential to achieve the best overall value in terms of price and quality. In this context Government need to build awareness among the stakeholders and provide various infrastructural support, education and training.

5.2 Lessons Learned

- E-GP is efficient procurement system but concerned procuring agencies and bidders had found initial difficulties.
- Introduction and adoption of e-GP requires necessary preparations for capacity building with technical manpower and logistic facilities and effective support

services. These should have been Emphasized well ahead of time before its introduction. However, e-GP is being adopted by the stakeholders.

- Implementation of PPR only based on electronic system has the potential to be effective, efficient, and sustainable for motivating and changing the mind set of the people and civil society regarding Public Procurement.
- There is some dissimilarities between PPR and e-GP guidelines which may create legal complications in future.
- The application of appropriate modern technologies in public procurement activities efficient and efficacious procurement management and compliance to PPR can be achieved.

5.3 Recommendations

Results from analysis of data suggest following recommendations to improve user experience and effectiveness of e-GP in BWDB.

- The server systems and data center of e-GP system needs to be upgraded and response should be smoother.
- Procuring Entities should be provided with required infrastructure and skilled human resources.
- Any problems regarding e-GP should be solved promptly.
- Awareness building is needed among the stakeholders of e-GP especially among the bidders. Also the need to be trained and developed.
- The evaluation process is still semi-manual. Thoughts can be given to make it fully digital.

References

- [1] Abdulrahman, Dong Li (2010), 'Organisational Issues with Electronic Government Procurement: A Case Study of the UAE', EJISDC (2010) 41, 3, 1-18.
- [2] Adebisi, AA, Ayo, CK & Adebisi Marion, O (2010), 'Development of Electronic Government Procurement (e-GP) System for Nigeria Public Sector', *International Journal of Electrical & Computer Sciences IJECS-IJENS*, 10 (6):74-84.
- [3] Alam, Syed Rafiqul (2012), 'Challenges of implementing electronic government procurement : a case study on Bangladesh water development board' , (BRAC University, 2012-12).
- [4] Aman, A & Kasimin, H (2011), 'E-procurement implementation: a case of Malaysia government', *Transforming Government: People, Process and Policy*, 5 (4): 330-44.
- [5] AOT Consulting (2003). Review of the GEM Purchasing E-Procurement Business System. Perth, Australia: AOT Consulting. (AOT).
- [6] Arjun Neupane, Jeffrey Soar, Kishor Vaidya, and Jianming Yong, 'Role of public e-procurement technology to reduce corruption in government procurement'. YEAR??
- [7] Auditor General Victoria (AGV) (2003). Electronic Procurement in the Victorian Government. Melbourne, Australia: Government of Victoria (AGV).
- [8] Birks, C, Bond, S. & Radford, M. (2001). Guide to e-Procurement in the Public Sector: Cutting through the Hype. London, UK: Office of Government Commerce, HMSO.
- [9] Central Procurement Technical Unit Website, Available from: <http://cptu.gov.bd>[Accessed: 15th January 2015].
- [10] Chyi-Lu Jang (2010), 'Measuring Electronic Government Procurement Success and Testing for the Moderating Effect of Computer Self-efficacy', *International Journal of Digital Content Technology and its Applications*, Volume 4, Number 3.
- [11] Chartered Institute of Procurement and Supply Website, Available from: <http://cips.org>[Accessed: 7th January 2015].
- [12] Consortium for Global Electronic Commerce (CGEC) (2002, October). Measuring and Improving Value of E-procurement Initiatives. Madison, WI: University of Wisconsin-Madison, Consortium for Global Electronic Commerce.
- [13] Department of Finance (DOF) (2001). Strategy for the Implementation of e-Procurement in the Irish Public Sector. Dublin, Ireland: Author.
- [14] ECOM Group (2002, February). e-Procurement in the UK Public Sector: A Guide to Developments and Best Practices (A CIPFA e-Government Forum Report). London, UK.
- [15] E-GP portal, Available from: <http://eprocure.gov.bd>[Accessed: 26-29 January 2015].

- [16] Engström, Wallström and Salehi-Sangari 2009, 'Implementation of public e-procurement in Swedish government entities', Proceedings of the International Multiconference on Computer Science and Information Technology, VOLUME 4, pp.315 – 319.
- [17] Gupta, S, Jha, B & Gupta, H (2009), 'E-Procurement: A Developing Country Perspective: A Study on New Trends Concerned with Developing Countries', *AIUB Journal of Business and Economics*, 122 (1): 161-75.
- [18] Juarez Paulo Tridapalli, Waltair V. Machado and Elton Fernandes. , 'e-procurement in brazil's state governments'. YEAR???
- [19] Kaliannan, M & Awang, H (2009), 'ICT to enhance administrative performance: a case study from Malaysia', *International Journal of Business and Management*, 3(5): 78.
- [20] Kalakota, R. and Robinson, M (2000) e-Business 2.0: Roadmap for Success. Reading, MA. Addison-Wesley.
- [21] Kishor Vaidya, A. S. M. Sajeev and Guy Callender (2006) "Critical Factors that Influence e-Procurement Implementation Success in the Public Sector", *Journal of Public Procurement*, Volume6, Issues 1 & 3, 70-99.
- [22] Kishor Vaidya , A.S.M. Sajeev and Guy Callender (2004) "e-Procurement Initiatives in the Public Sector: An Investigation into the Critical Success Factors" , 13th IPSERA conference, University of Catania.
- [23] Knut Leipold 9-12 July 2007, 'Electronic Government Procurement (e-GP) Opportunities & Challenges', Modern Law for Global Commerce Congress to celebrate the fortieth annual session of UNCITRAL, Vienna
- [24] KPMG (2001). University of California Office of the President System- Wide E-Procurement Assessment and Strategy Recommendation. Berkely, CA: KPMG Consulting.
- [25] Krysiak, M.,Tucker, C.,Spitzer, D., and Holland, K. (2003) "E-Procurement; State Government Learns from the Private Sector," in: Digital Government; Principlesand Best Practices,A. Pavlichev (ed.), Idea Group Inc., Hershey PA, USA.
- [26] Ndou, V (2004), 'E-government for developing countries: opportunities and challenges', *The Electronic Journal of Information Systems in Developing Countries*,18 (1):1-24.
- [27] Neef, D. (2001). E-Procurement: From Strategy to Implementation, Englewood Cliffs, NJ: Prentice-Hall.
- [28] Office of Government Commerce (OAG) (2002). A guide to e-Procurement for the public sector, Office of Government Commerce, London. Available at www.ogc.gov.uk. (OGC). (Retrieved October 1 2003).
- [29] Operational Services Division (OSD) (2001). Critical Success Factors and Metrics: Enhanced Comm-Pass Initiative. Boston, MA: Commonwealth of Massachusetts.
- [30] Pathak, R, Prasad, R, Singh, G, Naz, R & Smith, R (2006), Exploring the Potential of e-Governance Applications for Reducing Corruption: The Case of the Indian Public Sector.[On-line]. Available at

http://www.napsipag.org/PDF/Reducing_Corruption.pdf. [Retrieved December 15,2011].

- [31] R. Somasundaram, J. Damsgaard (2005) ,'Policy Recommendations for Electronic Public Procurement', Electronic Journal of e-Government Volume 3 Issue 3 2005 (147-156).
- [32] Stenning & Associates Pty Ltd (S&A) (2003). Final Report: Evaluation and Review of the e-Procurement Pilot Project, Version 1.2, Hobart, Australia.
- [33] World Bank and Government of the Peoples Republic of Bangladesh (2006,) 'Report on Electronic Government Procurement (e-GP) Readiness Assesment'.
- [34] United Nations Headquarters, New York 2011, 'Report of the Expert Group Meeting, "E-Procurement: Towards Transparency and Efficiency in Public Service Delivery"'.
- [35] World Bank (WB) (2003). Electronic Government Procurement (e-GP): World Bank Draft Strategy. Washington, DC: Author.

Appendices

Appendix-A: Questionnaire

(Questionnaire for officials of BWDB)

Questionnaire No. _____ Date: ___/___/_____

Name of the Respondent: _____ Gender : Male female

Office Name: _____ Designation: _____

Phone No: _____ Email: _____

01. Are you a registered user of e-GP in Bangladesh?
 Yes No
02. Which one is your role or function regarding e-GP? (select multiple if applicable)
 HOPE Approving authority Authorized Officer
 Procuring entity TOC/POC member TEC/PEC member
03. Do you have training on procurement?
(if yes then please specify the number of days)
 Yes _____ Days No
04. Do you have training on e-Government(e-GP) procurement?
(if yes then please specify the number of days)
 Yes _____ Days No
05. How long are you working in public procurement?
(Mention years)
_____ Years
06. How long are you using e-GP?
(Mention years)
_____ Years
07. Approximately how many tenders have you invited/prepared through e-GP system?

08. On an average how many Suppliers participated in each tender?

To what extent do you agree or disagree with the following statements (question no 09 -36)

09. Its easy and convenient to use the e-GP systems
 strongly agree agree neutral disagree strongly disagree
10. The Information of the e-GP system is complete
 strongly agree agree neutral disagree strongly disagree
11. The Information of the e-GP system is accurate
 strongly agree agree neutral disagree strongly disagree
12. The Information of the e-GP system is secure
 strongly agree agree neutral disagree strongly disagree
13. The e-GP system is reliable
 strongly agree agree neutral disagree strongly disagree
14. The e-GP system is open to customization/modification
 strongly agree agree neutral disagree strongly disagree
15. The Online Support/Helpdesk services e-GP system is good
 strongly agree agree neutral disagree strongly disagree
16. The support provided by BWDB e-GP cell for e-GP system is adequet
 strongly agree agree neutral disagree strongly disagree
17. The Regulation and support by CPTU for e-GP system is adequate
 strongly agree agree neutral disagree strongly disagree
18. The use of e-GP system makes procurement processes easier
 strongly agree agree neutral disagree strongly disagree
19. The use of e-GP system reduces the time of procurement cycle
 strongly agree agree neutral disagree strongly disagree
20. The use of e-GP system improves procurement performance (efficiency & effectiveness)
 strongly agree agree neutral disagree strongly disagree
21. The use of e-GP system makes Decision making faster
 strongly agree agree neutral disagree strongly disagree
22. The use of e-GP system improves compliance to the procurement rules
 strongly agree agree neutral disagree strongly disagree
23. The use of e-GP system improves Performance monitoring capability
 strongly agree agree neutral disagree strongly disagree
24. The use of e-GP system ensures competition
 strongly agree agree neutral disagree strongly disagree
25. The use of e-GP system is helpful to reduce corruption
 strongly agree agree neutral disagree strongly disagree

26. The use of e-GP system is helpful to reduce Coercion
 strongly agree agree neutral disagree strongly disagree
27. The use of e-GP system is helpful to reduce fraudulent practice
 strongly agree agree neutral disagree strongly disagree
28. The e-GP system is Transparent
 strongly agree agree neutral disagree strongly disagree
29. The e-GP system is more accountable
 strongly agree agree neutral disagree strongly disagree
30. The e-GP system should be accessible from smart phones?
 strongly agree agree neutral disagree strongly disagree
31. Power interruption and failure is one of the major Problem for e-GP Operation
 strongly agree agree neutral disagree strongly disagree
32. Your office has adequate hardware and internet support for e-GP Operation
 strongly agree agree neutral disagree strongly disagree
33. Are you satisfied with the functions of e-GP system
 strongly agree agree neutral disagree strongly disagree
34. Are you satisfied with the Information of e-GP system
 strongly agree agree neutral disagree strongly disagree
35. Are you satisfied with the overall use of e-GP system
 strongly agree agree neutral disagree strongly disagree
36. Are the reports generated by e-GP system adequate for BWDB?
 (if No, please recommend reports those need to be incorporated)
 Yes No _____

37. Do you think the Top management support regarding e-GP system is adequate?
 If No, please recommend some steps
 Yes No _____

38. Do You have any suggestions for the improvement of e-GP system?

Signature the Respondent

Declaration: *This Questionnaire has been prepared for the purpose of dissertation project as partial requirement of Master in Procurement and Supply Management program run by the BRAC Institute of Governance and Development (BIGD) of BRAC University, and will be used only for academic purpose*

Appendix-B: Descriptive Statistics

Questions	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Range	Interquartile Range
Its easy and convenient to use the e-GP systems	4.1967	.10141	4.00	4.00	.79204	.627	-1.203	.306	1.827	.604	3.00	1.00
The Information of the e-GP system is complete	3.1311	.11565	3.00	4.00	.90324	.816	-.267	.306	-1.083	.604	4.00	2.00
The Information of the e-GP system is accurate	3.7869	.09949	4.00	4.00	.77706	.604	-.927	.306	.859	.604	3.00	.00
The Information of the e-GP system is secure	4.1639	.07816	4.00	4.00	.61047	.373	-.096	.306	-.347	.604	2.00	1.00
The e-GP system is reliable	4.3770	.06679	4.00	4.00	.52166	.272	.153	.306	-1.182	.604	2.00	1.00
The e-GP system is open to customization/modification	3.0984	.13968	3.00	3.00	1.09095	1.190	-.201	.306	-.636	.604	4.00	2.00
The Online Support/Helpdesk services e-GP system is good	3.6721	.08659	4.00	4.00	.67630	.457	-.493	.306	.364	.604	3.00	1.00
The support provided by BWDB e-GP cell for e-GP system is adequate	3.9836	.10320	4.00	4.00	.80606	.650	-.759	.306	.571	.604	3.00	.50
The Regulation and support by CPTU for e-GP system is adequate	3.6885	.09507	4.00	4.00	.74254	.551	-.684	.306	.415	.604	3.00	1.00
The use of e-GP system makes procurement processes easier	4.4426	.06412	4.00	4.00	.50082	.251	.237	.306	-2.011	.604	1.00	1.00
The use of e-GP system reduces the time of procurement cycle	4.1803	.08592	4.00	4.00	.67102	.450	-.569	.306	.738	.604	3.00	1.00
The use of e-GP system improves procurement performance (efficiency & effectiveness)	4.3115	.07590	4.00	4.00	.59276	.351	-.210	.306	-.572	.604	2.00	1.00
The use of e-GP system makes Decision making faster	4.1639	.09108	4.00	4.00	.71134	.506	-.823	.306	1.329	.604	3.00	1.00
The use of e-GP system improves compliance to the procurement rules	4.2131	.08782	4.00	4.00	.68592	.470	-.621	.306	.597	.604	3.00	1.00
The use of e-GP system improves Performance monitoring capability	4.1967	.09868	4.00	4.00	.77071	.594	-.809	.306	.527	.604	3.00	1.00
The use of e-GP system ensures competition	4.2623	.08716	4.00	4.00	.68073	.463	-.709	.306	.777	.604	3.00	1.00
The use of e-GP system is helpful to reduce corruption	4.5246	.07613	5.00	5.00	.59460	.354	-.835	.306	-.247	.604	2.00	1.00
The use of e-GP system is helpful to reduce Coercion	4.4098	.07158	4.00	4.00	.55908	.313	-.223	.306	-.879	.604	2.00	1.00
The use of e-GP system is helpful to reduce fraudulent practice	4.3607	.08109	4.00	4.00	.63332	.401	-.875	.306	1.744	.604	3.00	1.00
The e-GP system is Transparent	4.5082	.07970	5.00	5.00	.62244	.387	-1.318	.306	2.784	.604	3.00	1.00
The e-GP system is more accountable	4.4754	.07613	5.00	5.00	.59460	.354	-.640	.306	-.508	.604	2.00	1.00
The e-GP system should be accessible from smart phones?	3.9672	.13217	4.00	4.00	1.03227	1.066	-1.343	.306	1.781	.604	4.00	1.00
Power interruption and failure is one of the major Problem for e-GP Operation	4.3115	.10595	4.00	4.00 ^a	.82747	.685	-1.741	.306	4.302	.604	4.00	1.00
Your office has adequate hardware and internet support for e-GP Operation	2.8852	.14238	3.00	4.00	1.11203	1.237	-.142	.306	-1.085	.604	4.00	2.00
You are satisfied with the functions of e-GP system	3.9180	.05865	4.00	4.00	.45808	.210	-1.411	.306	6.009	.604	3.00	.00
You are satisfied with the Information of e-GP system	3.8852	.07428	4.00	4.00	.58018	.337	-1.055	.306	3.006	.604	3.00	.00
You are satisfied with the overall use of e-GP system	4.1311	.06391	4.00	4.00	.49918	.249	.274	.306	.819	.604	2.00	.00

Appendix-C: Kruskal-Wallis Test(Mean)

Kruskal-Wallis Test

Ranks

	Do you have training on e-Government(e-GP) procurement?	N	Mean Rank
Its easy and convenient to use the e-GP systems	0	26	26.96
	1	35	34.00
	Total	61	
The Information of the e-GP system is complete	0	26	33.38
	1	35	29.23
	Total	61	
The Information of the e-GP system is accurate	0	26	27.31
	1	35	33.74
	Total	61	
The Information of the e-GP system is secure	0	26	28.00
	1	35	33.23
	Total	61	
The e-GP system is reliable	0	26	30.33
	1	35	31.50
	Total	61	
The e-GP system is open to customization/modification	0	26	34.65
	1	35	28.29
	Total	61	
The Online Support/Helpdesk services e-GP system is good	0	26	27.00
	1	35	33.97
	Total	61	
The support provided by BWDB e-GP cell for e-GP system is adequate	0	26	29.81

	1	35	31.89
	Total	61	
The Regulation and support by CPTU for e-GP system is adequate	0	26	33.46
	1	35	29.17
	Total	61	
The use of e-GP system makes procurement processes easier	0	26	30.40
	1	35	31.44
	Total	61	
The use of e-GP system reduces the time of procurement cycle	0	26	34.85
	1	35	28.14
	Total	61	
The use of e-GP system improves procurement performance (efficiency & effectiveness)	0	26	37.94
	1	35	25.84
	Total	61	
The use of e-GP system makes Decision making faster	0	26	34.48
	1	35	28.41
	Total	61	
The use of e-GP system improves compliance to the procurement rules	0	26	33.92
	1	35	28.83
	Total	61	
The use of e-GP system improves Performance monitoring capability	0	26	34.00
	1	35	28.77
	Total	61	
The use of e-GP system ensures competition	0	26	30.60
	1	35	31.30
	Total	61	
The use of e-GP system is helpful to reduce corruption	0	26	30.62
	1	35	31.29
	Total	61	
The use of e-GP system is helpful to reduce Coercion	0	26	28.71
	1	35	32.70
	Total	61	

	0	26	30.00
The use of e-GP system is helpful to reduce fraudulent practice	1	35	31.74
	Total	61	
	0	26	29.75
The e-GP system is Transparent	1	35	31.93
	Total	61	
	0	26	32.12
The e-GP system is more accountable	1	35	30.17
	Total	61	
	0	26	33.56
The e-GP system should be accessible from smart phones?	1	35	29.10
	Total	61	
	0	26	31.13
Power interruption and failure is one of the major Problem for e-GP Operation	1	35	30.90
	Total	61	
	0	26	27.40
Your office has adequate hardware and internet support for e-GP Operation	1	35	33.67
	Total	61	
	0	26	33.85
You are satisfied with the functions of e-GP system	1	35	28.89
	Total	61	
	0	26	33.92
You are satisfied with the Information of e-GP system	1	35	28.83
	Total	61	
	0	26	30.44
You are satisfied with the overall use of e-GP system	1	35	31.41
	Total	61	

Appendix-D: Kruskal-Wallis Test (P-Values)

	Chi-Square	df	Asymp. Sig.
Its easy and convenient to use the e-GP systems	2.951	1	.086
The Information of the e-GP system is complete	.921	1	.337
The Information of the e-GP system is accurate	2.747	1	.097
The Information of the e-GP system is secure	1.716	1	.190
The e-GP system is reliable	.089	1	.766
The e-GP system is open to customization/modification	2.066	1	.151
The Online Support/Helpdesk services e-GP system is good	2.993	1	.084
The support provided by BWDB e-GP cell for e-GP system is adequate	.252	1	.615
The Regulation and support by CPTU for e-GP system is adequate	1.141	1	.286
The use of e-GP system makes procurement processes easier	.069	1	.793
The use of e-GP system reduces the time of procurement cycle	2.726	1	.099
The use of e-GP system improves procurement performance (efficiency & effectiveness)	8.963	1	.003
The use of e-GP system makes Decision making faster	2.232	1	.135
The use of e-GP system improves compliance to the procurement rules	1.535	1	.215
The use of e-GP system improves Performance monitoring capability	1.545	1	.214
The use of e-GP system ensures competition	.029	1	.864
The use of e-GP system is helpful to reduce corruption	.028	1	.867
The use of e-GP system is helpful to reduce Coercion	.979	1	.322
The use of e-GP system is helpful to reduce fraudulent practice	.185	1	.667
The e-GP system is Transparent	.296	1	.586
The e-GP system is more accountable	.230	1	.632
The e-GP system should be accessible from smart phones?	1.107	1	.293
Power interruption and failure is one of the major Problem for e-GP Operation	.003	1	.955
Your office has adequate hardware and internet support for e-GP Operation	2.016	1	.156
You are satisfied with the functions of e-GP system	2.809	1	.094
You are satisfied with the Information of e-GP system	2.161	1	.142
You are satisfied with the overall use of e-GP system	.076	1	.783