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Does Digitalization Bring Efficiency in Public Procurement Management? An Evaluation of Bangladesh's Electronic Government Procurement System (e-GP)

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ABSTRACT

Electronic Government Procurement (e-GP) is primarily a public procurement reform initiative undertaken by the Bangladesh government to streamline procurement activities efficiently and effectively by procuring agencies. The study investigated the Procuring Entities (PEs) and the Bidders nationwide. A structured questionnaire survey was conducted among bidders from 64 Districts, and Focus Group Discussions (FGDs) were held with different leading Procurement Entities (PEs) to determine the effectiveness of the e-GP System. It has been found that it helps to ensure efficiency in many dimensions of the procurement process. The e-GP System is faster, time-saving, user-friendly, and less procedural than the conventional procurement process. The study also found that the procurement lead time has reduced substantially and increased competition by many folds due to the adoption of the e-GP System. The System has brought efficiency by reducing corruption, costs, visits, procurement lead time and saving public funds. However, the competition in OTM (Works), language barriers and centralised training for e-GP remained as issues. A fully automated e-GP system could be a comprehensive solution to the conventional paper-based procurement process, overcoming these problems and ensuring ultimate success.

Keywords: Public Procurement, Efficiency, e-GP, Electronic Government Procurement, Bidders, Procurement Entity, Procurement Lead Time.

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INTRODUCTION

Across the world, *"governance,"* especially *"good governance,"* plays an indispensable role in economic development. A sine-qua-non fact is that the more developed the state's governance system, the more developed the country is (Biswas and Rahman, 2018). Simultaneously, sound public financial management is the prerequisite for providing better public services and maintaining sustainable socio-economic conditions in a country (Duri, 202). However, making the governing System more functional, transparent, and efficient is always a significant challenge, particularly for developing countries with widespread malpractice, corruption, inefficiency, a lack of integrity, and commitment. The public procurement system of Bangladesh is not an exception.

Since the late 1980s, many developing countries have initiated reforms primarily aimed at reducing costs through downsizing, decentralisation, and outsourcing of their public services (Lee and Haque, 2006; Islam, 2018). Like other developing countries, the government of Bangladesh adopted various reform initiatives at different times to improve the quality of public service deliveries (Waheduzzaman, 2019). Reform in public procurement is also part of this reform agenda, formally initiated in 2001 with the establishment of the Country Procurement Assessment Report (CPAR) in collaboration with the World Bank. As per the report, *'the process is far from satisfactory, and substantial delays occur in most of the procurements, and reasons for unsatisfactory features are poor advertisement and specification, corruption and outside influences, negotiation, irregularities ....."* (World Bank Group, 2021). After years of successive efforts, the government of Bangladesh was finally able to formulate the Public Procurement Act (PPA) 2006 and the Public Procurement Rules (PPR) 2008, with several subsequent amendments. Although the provision for electronic procurement was already embedded in PPA-2006 and PPR-2008, it took several years more. In 2011, the government was finally able to introduce the Electronic Government Procurement (e-GP) system, along with guidelines. Later, the use and popularity of electronic procurement increased manifold among bidders and Procuring Entities (PEs).

As third-generation reform initiatives, the advent of digital technologies has significantly transformed public procurement processes across the globe. Prominent among these transformations is the emergence of electronic government procurement systems (e-GP), which are increasingly being adopted in both developing and developed countries. The introduction of e-procurement is an excellent instance of powerful state discretion and dedication towards reforming

the public procurement system and solving public procurement problems (Nozadze, 2015). Digitalisation in public procurement is recognised for its potential to enhance efficiency and overall governance (Croom & Brandon-Jones, 2007). This transformation entails the transition from paper-based processes to electronic platforms that facilitate various stages of procurement, including requisition, tendering, evaluation, and contract management (Brammer & Walker, 2016). By integrating digital technologies, public procurement systems aim to streamline operations, reduce costs, enhance competition, and foster transparency (Rogers & Galy, 2010).

Electronic Government Procurement (e-GP) is an automated system designed to handle all or any steps of the public procurement process. It is defined as the usage of web-based functions that allow employees of an organisation to buy goods and services and allow the suppliers to manage and fulfil those purchase orders (Jeffrey F & Bernard J, 2003). It involves computerised methods in every stage of the public procurement process, from need assessment to making payments and credibly managing contracts (Tonkin, 2003). E-procurement utilises information and communication technologies to streamline the acquisition of goods, works and services, carrying out individual or all stages of the procurement process, from sourcing to post-procurement review (Nyagah, Kaimuri Hellen & Patrick Mwanga, 2015). The wide dissemination of tenders reduces corruption by increasing participation and ensuring value for money (Hui et al., 2011).

E-procurement is emerging worldwide, with the potential to improve market access and promote integrity in public procurement (Schapper, 2008). It can also prevent and reduce opportunities for corruption at various stages of public procurement. As per the e-GP Guidelines, "e-GP means procurement by Procurement Entity using the Electronic Government Procurement (e-GP) System developed, hosted and operated by the government of Bangladesh through CPTU (recently renamed as BBPA), Ministry of Planning (Ministry of Planning, 2011).

Efficiency in public procurement can be evaluated through various dimensions, including time savings, cost reductions, process improvements, and enhanced transparency (Mawdsley et al., 2016). Here in our study, we also find that the introduction of electronic Systems in Bangladesh has helped reduce procurement lead time, corruption, and costs, saving public funds, accelerating the procurement process, increasing competition, and creating value for money. With the advent of the e-GP system, the phrase "Tender Baji" (snatching the tender box) has disappeared from the country's daily newspapers. Besides, the e-GP System earned huge confidence of the PEs and bidders due to its user-friendly

nature and strong security system. Although *the competition in OTM (Works) remains an issue due to the bidder's inability to understand English, the lack of decentralised e-GP training for bidders and PEs, and relatively high document prices for low-value contracts, the popularity and use of the e-GP system are advancing triumphantly in Bangladesh.*

It appears that electronic government procurement is a vital issue in ensuring governance in public financial management, and it warrants more attention in Bangladesh, where little academic research has been conducted to date. As the use and volume of the e-Government Procurement(e-GP) system are growing, especially among different government agencies, in terms of capacity and monetary transactions, the government is more committed to bringing efficiency and creating value for money in this sector. This study has been designed to examine the existing situation of these three indicators and find ways to improve it.

METHODOLOGY

The primary objective of this research article is to gain an in-depth understanding of how the digitalisation of Bangladesh's public procurement process contributes to ensuring efficiency. The study primarily relies on numerical data collected through digital and manual methods. Primary data were gathered from key stakeholders—both Bidders and Procuring Entities (PEs) registered in the e-GP System and actively using the e-GP digital portal for various procurement activities. A structured questionnaire was used to collect data. Two hundred (200) bidders, mainly members of the Government Tenderers' Forum (GTF) across all 64 districts, were surveyed through an online questionnaire over an extended period (2019–2020) due to the COVID-19 pandemic.

In addition, Focus Group Discussions (FGDs) were organised with groups of six to ten participants. These were held during various seminars and conferences conducted by the research team in four of the country's older administrative divisions and at the Bangladesh Public Administration Training Centre (BPATC). The FGDs aimed to gather firsthand insights into the basic understanding of the e-GP System, including its advantages and drawbacks, from both contractors and Procuring Entities PEs. A semi-structured format was used in these discussions to extract more nuanced information about system usage and the challenges faced. The research team facilitated and conducted the interviews to maintain consistency in the questions.

Five FGDs were conducted to evaluate the pros and cons of the e-GP System. Four focus group discussions (FGDs) involved PEs and bidders in

BPATC, Habiganj, Rajshahi, and Magura. One focus group discussion (FGD) was conducted exclusively with bidders to facilitate face-to-face interaction and validate information obtained through the digital questionnaire. Among the other FGDs, three involved PEs from diverse departments to gather a broad perspective on their e-GP experiences, while one brought together e-GP experts from the Local Government Engineering Department (LGED) to enable detailed discussion without reservation.

Secondary data were sourced from the e-GP platform, previous studies, websites, and official government orders, gazettes, and circulars. Both qualitative and quantitative methods were used, and modern statistical tools were applied to represent the findings.

Structural System of e-GP and Conceptual Framework:

In the context of developing countries, such as Bangladesh, the introduction of e-GP has been pivotal. The Bangladesh government implemented an e-GP system in 2011, aiming to digitise the procurement process to combat corruption and inefficiencies (World Bank, 2017). It is a web-based system that encompasses the entire procurement lifecycle and records all procurement activities and information. It is must use for all government procurement entities to procure by spending public funds. The scope of this System is to maintain complete and up-to-date Public Procurement activities of all public agencies as well as provide tender opportunities to all potential bidders from home and abroad. The System encourages the participation of many bidders as it is feasible to take part from any corner of the globe. Public procurement plays a central role in the development and comprises a substantial share of the national economy in nearly every country.

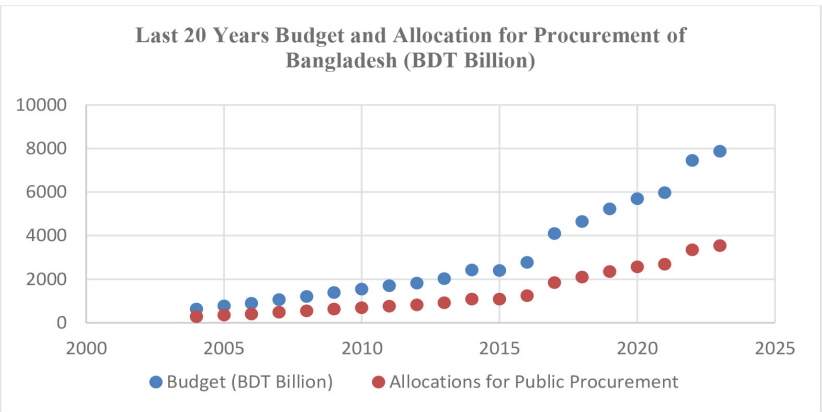


Figure 1: Yearly Budget and Approximate Allocation for Public Procurement;
Source: Author's Compilation using Bangladesh Budget Reports Data

Table 1: Number of Tenders Invited by Using e-GP System Over the Periods of Last 10 Years; Source: Author's Compilation using CPTU's Data

FY	No. of Tender Invited	No. of bidders Registered	Value of Tender (in crore Tk.)
FY 12-13	295	14	24
FY 13-14	1067	498	496
FY 14-15	9238	8436	5704
FY 15-16	15559	26102	20352
FY 16-17	22186	57935	48412
FY 17-18	33792	102958	91071
FY 18-19	46144	190131	869
FY 19-20	55648	247779	23362
FY 20-21	74516	400106	410163
FY 21-22	99109	600892	608681

This article sketches Electronic Government Procurement (e-GP), explaining how it works within a complex network of stakeholders. The Procuring Entities must adhere to the requirements of the legal framework by complying with its procedures and provisions. The successive stages of public procurement include planning (choosing a procedure and measures to solicit offers from bidders), processing (examining and evaluating documents and proposals, awarding contracts, and managing contracts), and ***implementation*** contracts according to the conditions. Bangladesh's entire public procurement procedure is primarily guided by the Public Procurement Act (PPA) of 2006, the Public Procurement Rules (PPR) of 2008, and the Delegation of Financial Power, circulated by the Ministry of Finance. Besides the Right to Information Act-2009, The Anti-corruption Act2004, e-GP Guideline-2011, Information Security Policy Guideline- 2013 and General Financial Rules (GFR) are guiding public officials responsible for public procurement, auditors and other financial management specialists in their everyday business relating to public procurement and ensure compliance with the current legislation and application of international best practices.

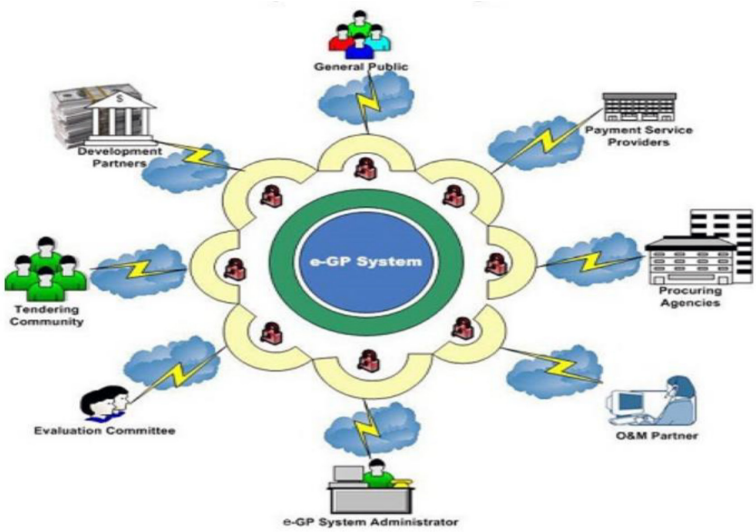


Figure 2: Structural system of e-GP in Bangladesh; Source: CPTU website

This conceptual framework outlines how digitalisation or e-procurement can enhance the efficiency of the public procurement system in Bangladesh. The framework identifies key independent variables that influence efficiency, with digitalisation acting as a mediating variable.

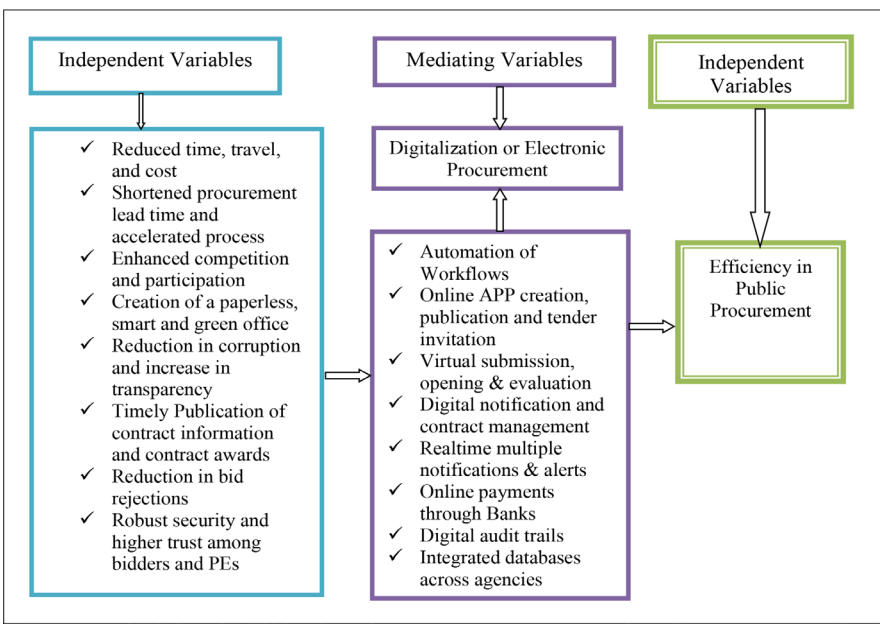


Figure 3: Conceptual Framework of Digitalization and Public Procurement Efficiency; Source: Author's Compilation using Study Data

The framework assumes that digitalisation or e-procurement acts as a mediating mechanism through which several independent variables contribute to improving efficiency in public procurement. These include operational and transactional improvements such as reducing time and cost, minimising bid rejections, and enhancing trust. The digital procurement environment supports these outcomes by standardising and accelerating processes, increasing transparency, and promoting wider participation. As a result, the procurement system becomes more efficient, reliable, and credible.

RESULT AND DISCUSSIONS

The electronic Government Procurement system has been developed in Bangladesh as one of the government's extensive reform efforts through the digitalisation process known as e-GP (It is a robust approach adopted by Bangladesh's Government intending to secure efficiency in public procurement by reducing corruption, time, cost, and visit. The e-GP system intends to replace the stages of the conventional paper-based procurement system. It has also been proven to be time-saving, productive, and cost-effective for governments. The paper focuses on measuring the effectiveness of the e-GP System in ensuring efficiency. It has an apparent relationship to performance measurement. It demonstrates legitimate relationships among goals, objectives, and measures, indicating the extent to which government offices effectively achieve their objectives. According to Berman and Wang (2000), efficiency evolves when decisions are made, and resources are allocated based on the community's long-term well-being. Therefore, this analysis focuses on efficiency.

Efficiency

The term' efficiency' means the System by which organisations deliver results which meet society's needs by making the best use of available resources (What is Good Governance? 2000). Goods, works, or services provided by the government worldwide are generally affected by inefficiency problems, and the most common form of this inefficiency are phenomena like cost overruns and delays in the execution of contracts. Both phenomena negatively impact citizens' welfare and consequently increase public expenditure (Guccio, Pignataro, and Rizzo, 2012). In our study, the efficiency of the e-GP System has been measured in terms of reducing procurement lead time, plummeting time, visits, and costs while increasing competition and the rate of contract award within the stipulated time. Additionally, it aims to create a paperless office and ensure a robust security system. Besides the stakeholders' preference for e-GP over the manual System,

their perception, understanding, and confidence in the electronic System have been checked. Moreover, a comparison has been made between paper-based and electronic procurement systems based on the available information.

Public procurement should be carried out as cost-effectively as possible to ensure economic efficiency and make optimal use of public funds, meaning that when the government uses its resources to meet society's far-reaching welfare needs. The active use of the e-GP System by the bidders was checked, and more than 78% of the respondents reported vigorous use of the e-GP System. The liveliness of the bidders was checked purposively, as without vigorous participation in the process, they cannot provide feedback regarding the System's efficiency.

Figure 4: Period of Tenderer's last involvement in the e-GP System;
Source: Author's Compilation using Survey Data

Besides, almost all the bidders put their trust in the electronic System over the paper-based manual tendering process. It was found that almost 99% of the tenderers preferred the e-GP System over the manual paper-based System.

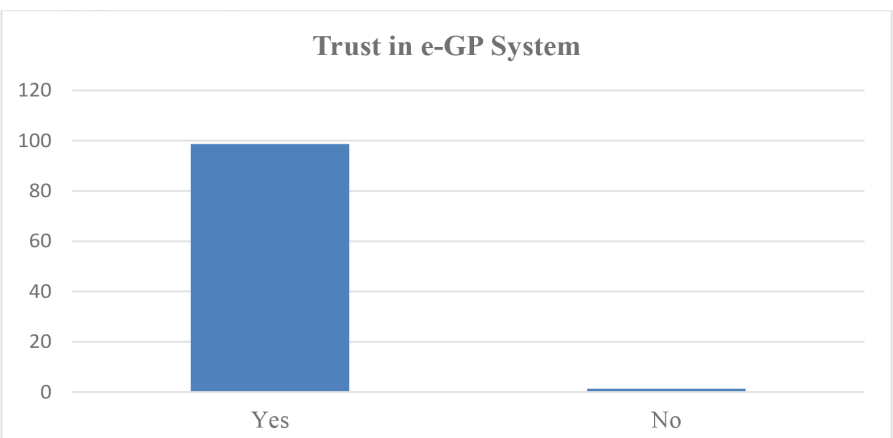


Figure 5: Preference of the bidders to the e-GP over the manual paper-based System;
Source: Author's Compilation using Survey Data

There are several reasons why e-GP is chosen as the preferred destination for procuring entities and tenders. The country witnessed thousands of incidents, including accidents such as grabbing the tender box, threats for not submitting documents, and the loss of lives in fights between two groups while submitting tender documents, as well as the wasting of time and resources (Ruud, 2020). However, in the e-GP System, the contractor is just a click away from submitting a tender that can relieve all parties involved in the procedure from the anxieties mentioned above. Most surprisingly, during the COVID-19 pandemic, the use of the e-GP System remained extremely high, as it did not stop for a second. According to CPTU, from March to December 2020, the e-GP System was opened 24/7, and 71,437 tenders were processed. The PEs and bidders have put their trust in the e-GP System over a paper-based system, and almost 77% of the bidders find it easy to use and consider it corruption-free.

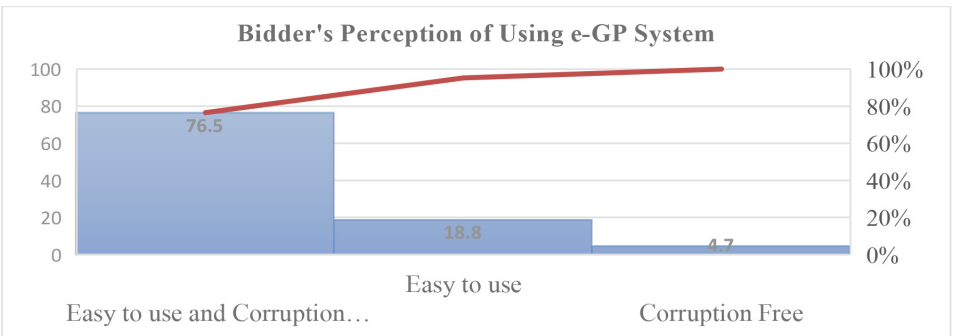


Figure 6: Preference of the tenderers for the e-GP System;
Source: Author's Compilation using Survey Data

Notably, 95.3% of the respondents found it easy to use, and 81.2% described it as corruption-free. The four major procurement hubs of the country —PWD, R&HD, BWDB, and LGED —have come forward to implement the government's noble agenda. The successful transition from a paper-based to an electronic system has brought about a revolutionary change in the country's public procurement process. Due to its simplicity and user-friendly nature, almost all government agencies (47 Ministries, 27 Divisions, 1483 Organisations, and almost 13,000 PEs) have already registered in the e-GP System. Every fiscal year, thousands of tenders and contracts are processed using this innovative System by these registered PEs, which involves millions of public funds.

Another vital factor that propelled the wheel of e-GP preferences among the PEs and Bidders is the time-bound nature. The speed through e-GP works is far more than a manual tendering process. The respondents are almost 100%

unanimous to the fact. From APP Creation to Contract Signing, the e-GP System is less procedural, and it is evident that the so-called Red Tape has come to an end for this electronic procurement process (The World Bank, 2008). The findings are highly consistent with those of the World Bank prior to the introduction of e-GP in 2011-12; the overall Procurement lead time was around 95 days, and by 2021-22, it had decreased to approximately 46 days.

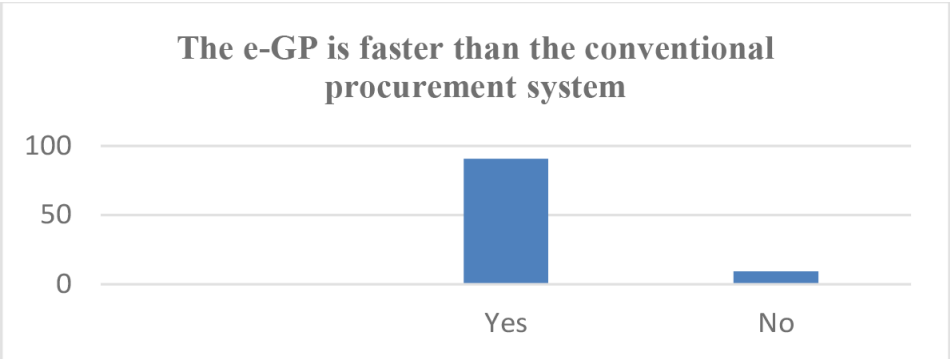


Figure 7: Bidders thinking the e-GP is faster than the conventional procurement system
Source: Author's Compilation using Survey Data

More than 90% of the respondents also found that procurement lead time (from tender invitation to contract to sign) has drastically compacted due to the inception of the e-GP System. Undoubtedly, this is a significant achievement of the e-procurement system in Bangladesh in terms of efficiency.

Respondents were asked why they think the e-GP System is faster than the conventional paper-based System of public procurement. The e-GP System is *easy to use, providing a digital pathway and reducing procedural steps,* making it truly smart and quicker.

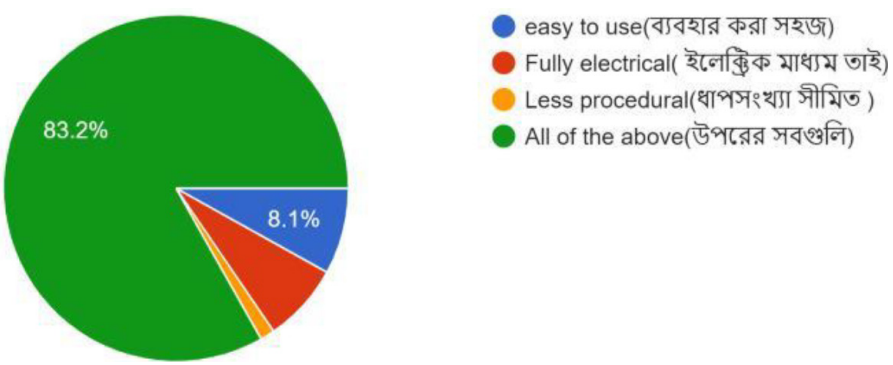


Figure 8: Reasons for e-GP being faster than manual procurement system;
Source: Author's Compilation using Survey Data

Another crucial aspect in terms of efficiency is that the speed and rate of timely contract awarding gained momentum (Byron and Alamgior, 2021). More than 93% of respondents find that the rate of contract award stipulated time has increased due to the initiation of the e-GP. According to the World Bank, before the inception of the electronic procurement system in Bangladesh, only 10% of cases contracts were awarded in a timely manner; this has increased to 90% (World Bank, 2008).

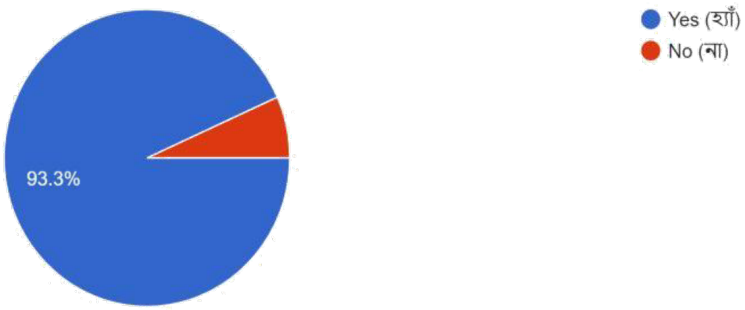


Figure 9: Increment of the rate of contract award in stipulated time;
Source: Author's Compilation using Survey Data

One of the most vital facts in public procurement is 'competition', which is also included in the basic procurement principles to ensure efficiency. In the absence of competition, a monopoly will exist, and in a monopolistic competitive environment, it is the bidders who set the tender prices. On the other hand, in a competitive market, a tender's price is set by the market mechanism (through the participation of multiple bidders). Therefore, in a competitive environment, a Procuring Entity has a lower chance of deprivation and a higher prospect of ensuring value for money.

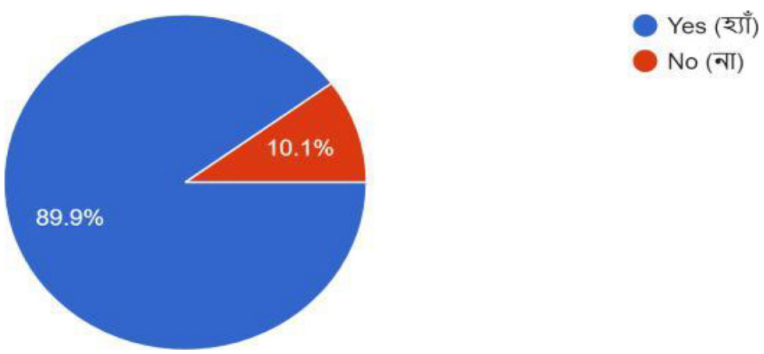


Figure 10: Average increment of competition in the e-GP System;
Source: Author's Compilation using Survey Data

So, in line with this fact, the study found a favourable response from the tenderers. Almost 90% of them agree that the average competition in the e-GP System has increased. Before the electronic tendering process's commencement, the average number of bidders per tender was only four (4), and now it has reached sixteen (16). The e-GP System postulates a valid genre of shaping the country's public procurement practice to be more productive through expedited competition.

However, these competitions are mainly among the enlisted tenderers. The Open Tendering Method (OTM), broadly applicable for large procurements, allows only a few tenderers to participate (especially in large construction projects or works) as additional qualifying requirements are sought from the PEs' end. According to the respondents, PEs, and tenderers, the provision of ± 10% rules means that most tenderers intend to drop their tender, keeping the price less than 10% of the Official Cost Estimated. In that case, additional requirements (some matrix) are sought that are easy for the large bidders to comply with, and eventually, the small bidders are kicked out of the bid. As such, OTM (works) is now a monopoly method in public procurement. The respondents also expressed that the instances of single-bidder participation have increased due to the regional dominance of large bidders in works. Although the competition in OTM (Works) is not satisfactory, the overall competition has increased, and the supplier's spontaneous participation in the electronic procurement system has enabled the authority to reach its desired objective of ensuring the optimal use of public funds.

Another feature of measuring efficiency is determining whether it saves time, visits, and costs. As per the study, approximately 86% of bidders fully agreed that the electronic procurement system reduces time, visits, and costs. The CPTU recorded 9,350 core Taka savings from government spending in 2018-19. The tender processing time has also been significantly reduced.

Figure 11: Reduction of time, travel, and cost in the e-GP System;
Source: Author's Compilation using Survey Data

Table 2: Number of Visits Requires at Different Stages of Procurement by the Bidders to PE's Offices/Banks

	Purpose of Visits						
Procurement Systems	To Purchase Documents	To Issue Tender Security (Bank)	To Submit Documents or Attend Tender Opening	To Accept Notification of Award (NoA)	To Issue Performance Security (Bank)	To Sign Contract	Total Visits
Manual	I	I	I /II	I	I	I	6-7
e-GP	All these stages can be performed electronically						0

Moreover, the implementation of e-GP will reduce 897 million km of distance transportation. It will save a huge amount of time for both the PEs and bidders that they used to spend by paying visits to PEs' offices or attending bidders' meetings.

The World Bank also found that the tender on e-GP has reduced the cost of paper usage by 6.9%, saving 10,287 million pages of paper, and the emission of carbon dioxide will also decrease to 559 tons. The study observed that 87.9% of the respondents believe that the e-GP process is entirely paperless. That means that without paper, it is possible to accomplish the tendering process. In contrast, earlier processes involved a vast amount of paper and ink at different stages of public procurement, exerting more pressure on the environment.

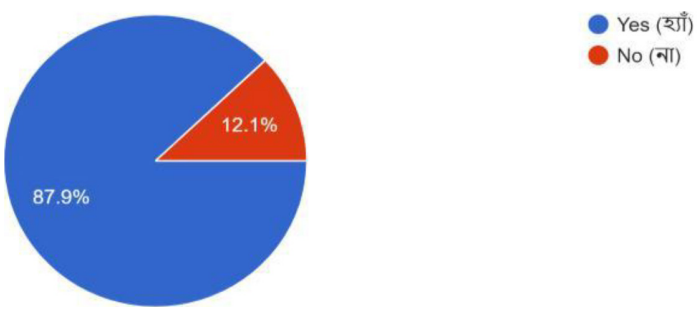


Figure 12: e-GP helps to create a paperless office;
Source: Author's Compilation using Survey Data

The conventional approach to efficiency emphasises the importance of achieving both financial effectiveness and ecological sustainability. This research reveals a substantial response from the interviewer, highlighting how e-GP has emerged with a vision to improve efficiency by making offices paperless and paving the way forward for implementing SDG goal 12.7. The System is well-guarded and well-known, as evidenced by the fact that 95.3% of respondents treat

it as highly secure or secure. In this modern era of technology, security is regarded as the mate-wand to efficiency measurement. The research team also has observed that the e-GP System has a robust system of authentication via mobile and email before logging into the System from multiple sources.

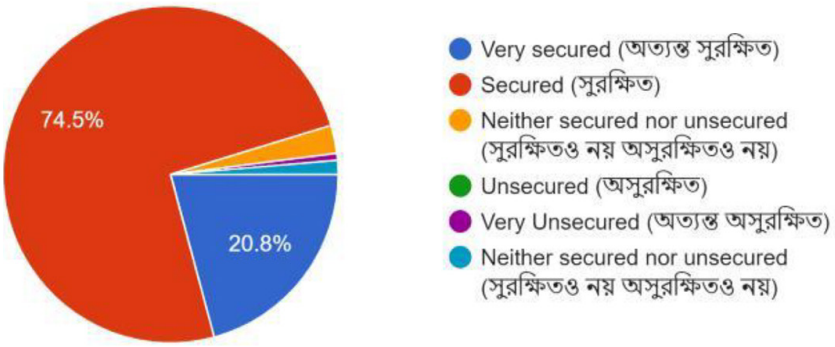
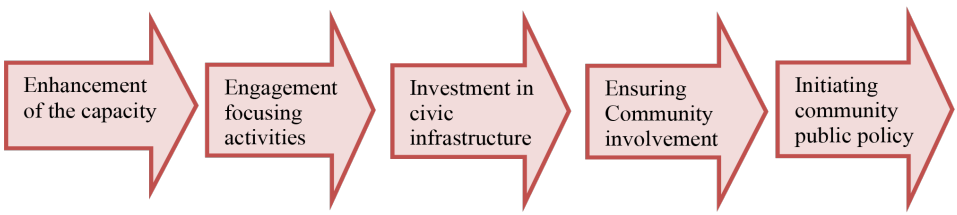
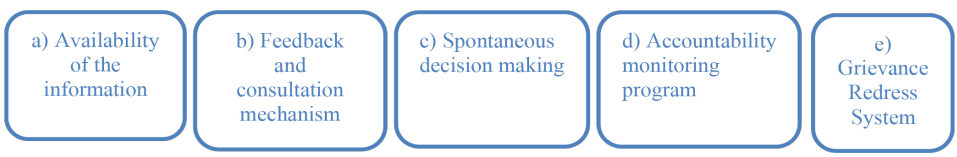


Figure 13: Respondents view regarding the security strength of the e-GP System;
Source: Author's Compilation using Survey Data

The efficiency of a system cannot be bound to some of the objects only. The efficiency lies in the entire agent's involvement in implementing the procedure within the stipulated timeframe to achieve high-level security. The stakeholders (69.8%) also suggested that greater citizen engagement will improve efficiency. The researchers also agree with the findings because the higher the citizens' engagement in decision-making, the greater it will be possible for them to contribute to the public procurement process. A proactive implementation process involving compatriots in e-procurement may enhance community collaboration and good governance. Those entail the following steps:



The way citizens engage in sketching, accomplishing, and scrutinising a complete virtual procurement model can be categorised into five categories. They are:



The e-procurement system was implemented to enhance good governance by reducing or eliminating corruption and ensuring utmost transparency in the country's public procurement operations. The majority of the respondents (61.1%) find that the System overcomes corruption and increases transparency. In a more combined way, almost 90% of the respondents believe that the System brings transparency and diminishes corruption.

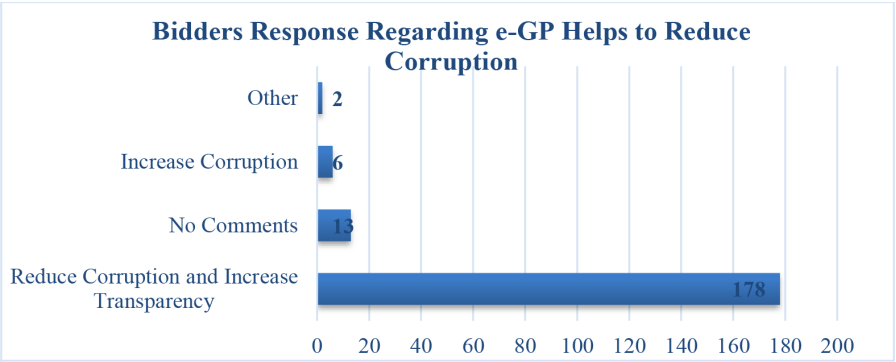


Figure 14: Causes of ensuring good governance in the e-GP System;
Source: Author's Compilation using Survey Data

A Comparison Between Paper-based and Electronic Procurement Systems

Table 3: Comparison between paper-based and electronic procurement systems; Source: Author's Compilation by using CPTU's data

Efficiency Related Issues	2011-12	2019-20
Publication of procurement notices	-	100 %
Publication of information on contract award	-	100 %
Procurement lead time	95 days	46
Timely Tender Awarded	10%	90%
The share of rejected bids decreased	8%	3%
Average number of Bidders	4	16

From the above table, it is quite apparent that the procurement lead time has been reduced by more than 51%. Almost 90% of contracts are being awarded in a timely manner, and the average number of competitions (average number of participants per bid) has increased by more than five times. Additionally, an estimated savings of US$600 million between FY12 and FY18 were calculated,

resulting from improved market access and a bidding environment compared to manual bidding (The World Bank, 2020).

Limitations

Implementing e-procurement is not an easy task, and the route is very challenging and full of forks. Public agencies with varying sizes, functional responsibilities, and capacities find it challenging to implement e-procurement across the countries. While asking how the tenderers and the PEs are well acquainted with the e-GP System, a good number have held back to this, and 31.5% said they do not have a sheer understanding of it.

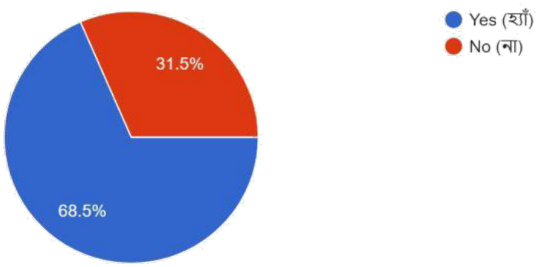


Figure 15: Do the bidders have a complete understanding of the e-GP System?
Source: Author's Compilation using Survey Data

As most respondents are not well-educated and technologically lagging, they have to rely on technical experts or local vendors to complete the tendering process.

Such kinds of dependencies also make the execution of the e-government procurement process more challenging. On the other hand, many Procuring Entities (PEs) that have just registered with CPTU have not taken any actions to implement the process. One of the primary reasons for not implementing e-procurement is the lack of comprehensive knowledge and training among stakeholders regarding the System.

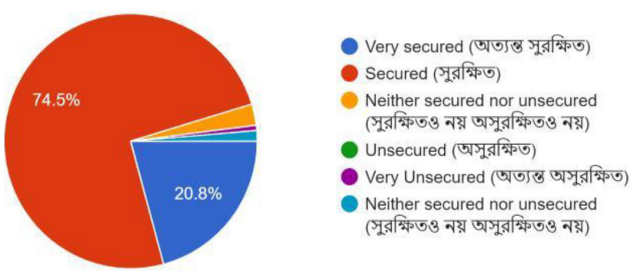


Figure 16: Necessity of expansion of training at the local level;
Source: Author's Compilation using Survey Data

Currently, training on e-GP is provided by the CPTU through a third-party provider. This centralised training system negatively impacted the efficient and transparent implementation of the System. More than 97.0% of the respondents feel that the training facilities should be expanded locally. Even some tenders urge to arrange training at the local level by forming small groups. The smoother means of training transfer for e-procurement will have a profound impact on the execution process, ensuring higher transparency, efficiency, and accountability. They need training because:

- they need to learn e-GP to enhance their skill
- because they have blatant knowledge of the System
- To submit the document properly, especially the qualification criteria.

Training is required for both tenderers and PEs for the full implementation of the web-based electronic procurement system.

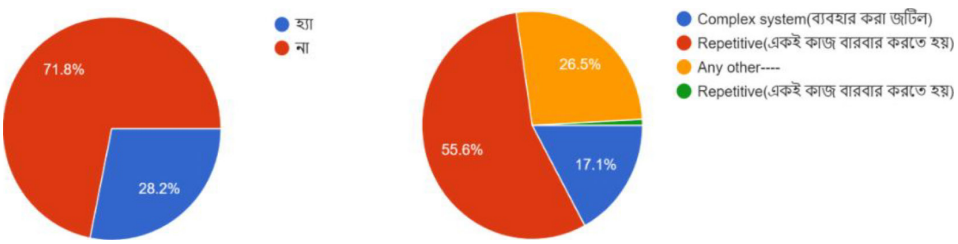


Figure 17: Complexity of the System and needs additional one to manage System;
Source: Author's Compilation using Survey Data

Due to a lack of training and a comprehensive understanding, tenderers often define the e-GP System as complex. Additionally, they are unable to manage their e-GP accounts independently. More than 87% of the bidders found the system intricate, and they needed to employ an additional person or seek help to maintain the account. The help-seeking from others does not come without cost. Sometimes, tenderers have to pay between Taka 1000 and 2000 or more per tender to complete a tender document and submit it. Therefore, the digital inclusion of citizens in e-procurement should be the next agenda item for the government, achieved through training and transfer.

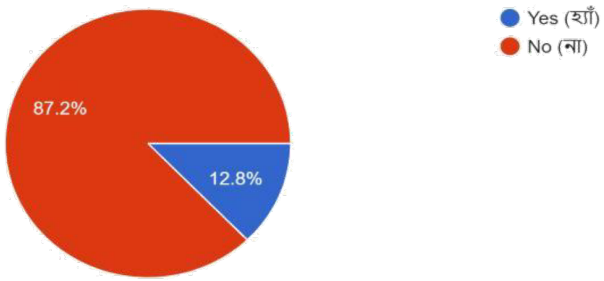


Figure 18: Obstacles faced by the Bidders in the e-GP system and reasons behind it;
Source: Author's Compilation using Survey Data

Among the other issues, the language of the e-procurement portal is another prime barrier for the bidders. They often find it challenging to run the System because the language is English, and there is no proper training.

From the FGDs, we also found that the procuring entities find it challenging to check the genuineness of the submitted documents. If a letter or mail is sent to the other PEs' end to ensure the authenticity of documents, such as experience certificates, trade licenses, and certificates of incorporation, it takes a considerable amount of time; sometimes, the other PEs do not respond. So, it is a time-consuming process. To resolve this, the PEs can issue or upload a bidder experience certificate and other relevant legal documents into the e-GP System, allowing PEs to easily check and verify them.

From the FGDs, both the PEs and Bidders suggested rethinking the existing rule of ± 10% in the OTM works. In that case, if the Official Cost Estimate (OCE) is disclosed (though it is confidential), some of the participated tenderer's quoted prices become exactly 10% lower than the OCE. In that scenario, a lottery is not permitted in OTM, so the tenders with equal quoted prices are evaluated by using a matrix. The matrix typically favours bidders who have a proven track record of performance with the PE. Therefore, bidders with a history of successful performance benefit from these situations.

Another problem lies in the efficiency of using different estimating systems across various engineering departments. For example, the price schedule for the same types of equipment differs for LGED, R&HD, and PWD. The FGDs with different PEs yielded a suggestion for a uniform price schedule that can enhance efficiency in this System.

On the other hand, although almost 90% of respondents agreed that average competition in the e-GP System has increased (from four to twenty-one), the influential contractor eats away at the petty bidders. Because, through the e-GP

System, a tenderer can participate in any tender anywhere in the country. However, after winning a tender, a bidder must perform or execute the order, which creates problems, especially in OTM works. Because in OTM (Works), the bidder must take over the site and relocate their personnel, machines, and materials to the working location. Now, the winning bidder is from Rajshahi and receives a work order in Chattogram. In that case, the bidders find it challenging to execute the work there due to musclemen or local political leaders. Being frightened, the winning bidders often hand over the contract to a local and powerful individual with a limited profit margin, which ultimately leads to poor and delayed execution of the work.

Although everything in the e-GP System is performed on an electronic platform, the tender evaluation is still done manually, which is strenuous and troublesome. Procuring entities must manually verify the tenderers' legal documents by sending letters or through mail to various Public Entities (PEs).

CONCLUSION AND RECOMMENDATIONS

Conclusion

With the process of digitalisation, the concept of governance has become more crucial, especially in the context of public procurement management. Like many developing economies of the world, the government of Bangladesh initiated the electronic procurement system as part of its reform agenda with a view to bringing efficiency to public spending by reducing corruption, procurement lead time, wastage of funds, travel, and costs, ensuring robust security, trusts and accelerating the whole process. Every year, the government of Bangladesh allocates a huge amount of money through its budget, and almost 45% of its yearly budget is spent on public procurement-related activities. As the volume of budget allocation increases, it requires better management, as corruption has historically been rife in public spending in Bangladesh due to a lack of checks and balances. The e-GP System has been introduced to minimise wastage of public funds, create value for money and ensure efficiency in the process. Based on the collected data, observations, and opinions of the respondents in the FGD, the efficiency in public procurement has increased significantly with the adoption of e-GP.

Similarly, the e-GP System has increased public procurement efficiency by reducing time, visit, and cost. Increasing competition through nationwide participation, fostering trust among bidders, ensuring user-friendliness, and implementing corruption-free, highly secure, and fully automated systems are other dimensions of the e-GP system's efficiency. The acceleration in tender processing

time, facilitated by easy access and reduced procedural requirements, has also contributed to increasing efficiency in the entire electronic procurement system in Bangladesh.

Nevertheless, there are still many areas of improvement in terms of efficiency. The incorporation of automation in evaluation and certification will significantly increase efficiency. When tenderers from a distant location participate in a tendering process, it becomes challenging for the PE to verify the authenticity of the tenderer's submitted legal documents. To solve the problem, both stakeholders opined that there should be an option for mandatory upgradation of the tenderers' database with all necessary details (including documents, running works, and completed works) by uploading up-to-date legal documents. Additionally, a system is needed that will automatically verify all submitted records centrally.

Regarding competition among tenderers as a means of efficiency, both the PEs and Bidders suggested rethinking the ± 10% rule in the procurement system by applying the OTM method, which favours large bidders who receive more facilities according to the existing evaluation matrix. The use of different estimating systems in different engineering departments. For example, the price schedule for the same types of equipment or goods differs for LGED, R&HD, and PWD. The government or CPTU can suggest a uniform price schedule that can enhance efficiency in this System.

Almost 90% of respondents agreed that the average level of competition in the e-GP System has increased. Before the electronic tendering process's commencement, the average number of bidders per tender was only four (4), and now it has reached twenty (21). It has been said that the influential contractor eats away at the petty bidders in the manual tendering system, but the e-GP System postulates a valid approach to shaping the country's public procurement practice more productively through expedited competition. Rashid (2018) also observed that, due to e-GP competition and responsiveness per tender, it almost tripled in 2017-18 compared to the past.

Although everything in the e-GP System is performed on an electronic platform, the tender evaluation is still done manually, which is strenuous and troublesome. Procuring entities must manually verify the tenderers' legal documents by sending letters or via email, and different procuring entities verify the same document at different times. The PEs proposed that implementing an automated evaluation matrix calculation system in the e-GP System would save a significant amount of time and effort, especially in calculating annual turnover and capacity.

Regarding payment, the respondents stated that all payments should be made through the IBAS++ system and that links have been established between the IBAS++ and e-GP systems. This will make it easier to have accurate and updated information on budget spending. Tenderers are not satisfied with the existing tender document and schedule price range; it can be divided into smaller ranges, especially the lower limits, which can be revisited.

One of the significant problems of e-GP from the tenderers' side is that most tenderers do not process their tender documents by themselves. Usually, more than one tenderer processes their documents with the same computer operator, which creates hassle among the tenderers. Therefore, the tenderers and the PEs demand more effective training at the local and regional levels of the country. Another problem is sub-contacting. Large bidders typically sell their contracts (works) to local subcontractors for a commission, resulting in substandard work. The engineering departments suggested revisiting the rules for authorising tenderers to prevent such irregular practices.

Currently, tendering can be completed up to the awarding of the NOA and uploading a signed contract agreement in the e-GP System. The implementation stage (Contract Management System) of the tendering process should be incorporated into the e-GP System. Everything will be automatic and hassle-free when 100% of the work is done using the e-GP System.

Finally, it can be concluded that despite some problems, the e-GP System is time, cost, and visit reducing procurement system in the country. Although it is not 100%, it significantly ensures efficiency in the public procurement sector in many ways. The study revealed that introducing a 100% electronic procurement system can significantly enhance efficiency.

Recommendations

- The necessary option should be integrated into the e-GP System to update the tenderer's database with all details mandatorily. There will be a unique number for every supplier, and PE will be able to search for every detail, such as necessary documents, ongoing works, completed works, yearly turnover, etc., by clicking on the supplier's profile. The tenderers will also have up-to-date legal documents (trade license, VAT certificate, Tax certificate, BIN number, and Bank Solvency) in their profiles, and there will be an option for auto-verification of the supplier's uploaded documents and records centrally.
- There should be a system-generated, uniform template for work completion and experience certificates in the System after successfully completing any contract, to prevent fraud and expedite the evaluation process.

- The rule of ± 10% should be deactivated, or a mechanism should be adopted to ensure equal opportunity for participation and competition of the marginal tenderers in the process.
- CPTU should take the necessary steps to unify the rate schedules of different departments (PWD, R&HD, and LGED), although some adjustments may be necessary due to geographic locations or regional considerations. Although all government agencies collect and procure various items, usually from the local market, the prices mentioned in their respective rate schedules differ significantly from one another.
- The efficiency of the System will increase if the procurement of ***'Service'*** is included, ensuring the quick disposal of all steps from tender invitation to making all payments. The inclusion of a Contract Management System (CMS) will facilitate the provision of bill payment (partial or complete) and the issuance of a Contract ***Completion Certificate*** by the PE based on the work experience with suppliers.
- The language of the e-GP portal, especially the tender document, should be in Bengali so that bidders can easily understand the tender requirements without needing assistance from others. It will also benefit the PEs and increase competition in the process. For this purpose, training of e-GP should be expanded to the root level for all stakeholders, especially for the tenderers.

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