

PROCUREMENT IN THE INFORMATION TECHNOLOGY (IT) SECTOR:
CHALLENGES AND OPPORTUNITIES

By

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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Approval

The thesis titled “Procurement in the Information Technology (IT) Sector: Challenges and Opportunities” submitted by Sumsuttibriz Riad (Student ID: 23382011, MPSM, Batch: 25) of Summer, 2025 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Masters in Procurement and Supply Management (MPSM).

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Ethics Statement

The research was a requirement for the completion of the Master of Procurement and Supply Management (MPSM) coursework at BRAC University, specifically the module "Procurement in the Information Technology (IT) Sector: Challenges and Opportunities." The research is highly in compliance with the academic honesty and ethics of BRAC University.

Both primary and secondary data have been gathered and applied responsibly. In surveys, interviews or consultations, the purpose of this research academically was explained to the respondents and their voluntary participation was guaranteed. No personal identifiers are revealed and the confidentiality has been preserved throughout the process of data processing and analysis. The researcher has conducted the study on his own and has no conflict of interest or outside influence that can affect the academic objectivity of the study. The findings and interpretation are being displayed in an honest manner and the researcher is ready to bear the responsibility of any mistake or oversights.

This ethics statement will ensure that the principles of honesty, fairness, respect and accountability in academic research are upheld by the researcher through this ethics statement.

Abstract/ Executive Summary

Purchase of Information Technology (IT) goods and services has become a critical aspect in the operations of both the public and the private sector all over the world. The increasing focus on digitalization, e-governance, and the modern service delivery eco-system in Bangladesh has placed IT procurement to be very significant in the country. Nevertheless, even with advances in Public Procurement Act (2006), Public Procurement Rules (2025) implementation and the introduction of the electronic Government Procurement (e-GP), IT procurement is still hit by several challenges that curtail effectiveness, transparency and efficiency of the process.

This study examines the issues and challenges of IT procurement, in particular as expressed in the area of government and the issues as seen in comparison to the commercial world. The research study has a mixed approach method by relying on both quantitative data based on surveys and qualitative data from interviews and focus group discussions with the procurement officials, IT consulting firms/suppliers, and policy experts. Government materials, scholarly research, and other best practices abroad are likewise tapped as secondary data to give context. These results point to some consistent issues of blurry or incomplete technical specifications/ToRs, over-prioritizing on the lowest bid compliance, the existence of a rigid legal and procedural system, a lack of technical expertise in the procurement department, poor integration between systems, and ineffective cybersecurity and data management. Most of these problems arise due to the incompatibility between the dynamic aspect of technology (rapid change) and the slow methodical procurement landscape. Simultaneously, the paper indicates the obvious chances to enhance IT purchasing. Venturing further, the increased functionality on the e-GP system, the acceptance of data analytics as a support in decision-making, introducing new models of procurement like agile, modular contracting and developing the capacity of the procurement department are all expected to be promising reforms. Improvement in transparency, efficiency, and value of money can also be secured with the use of emerging technologies, including secure transactions via blockchain, an automated analysis via AI, and assets monitoring via IoT.

The study is unique because it serves the needs of the literature by attempting to explore the Bangladesh context, which has not been explored much on the study of IT procurement. It also fills the divide between the legal and technological points of view and makes evidence-based policy and practice recommendations. The main suggestions are: refinement of the requirement definition, the inclusion of lifecycle costing during the assessment process, training of staff involved in procurement processes within IT-related skills, a greater flexibility of the procurement model, and better governance to make sure projects achieve their aim.

Finally, This paper maintains that IT procurement with appropriate reforms promises to become the leading source of innovation and improved services to the people and digital transformation of a country. The results can be applied to the policymakers and procurement practitioners not only in Bangladesh, but also in developing nations, which experience the same issues.

Keywords: IT procurement, public procurement, e-GP system, agile procurement, procurement reform, digital transformation, value for money.

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The overall effectiveness of IT procurement was rated at an average of 7 out of 10 by respondents. This suggests that procurement is working moderately well but has considerable room for improvement. The highest ratings were linked to organizations using QCBS evaluation methods and the e-GP system, while the lowest ratings were associated with delays, weak monitoring, and unclear requirements. This mixed picture demonstrates that while progress has been made, systemic reforms are still needed..32

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List of Acronyms

IT	Information Technology
PPA	Public Procurement Act
PPR	Public Procurement Rules
ToR	Terms of Reference
BIGD	BRAC Institute of Governance & Development
BPPA	Bangladesh Public Procurement Authority
QCBS	Quality and Cost-Based Selection
OTM	Open Tendering Method
a2i	Aspire to Innovate
ICTD	Information and Communication Technology Division
LGED	Local Government Engineering Department
e-GP	Electronic Government Procurement
OECD	Organization for Economic Co-operation and Development
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Coronavirus Disease of 2019
IoT	Internet of Things
AI	Artificial Intelligence
EDI	Electronic Data Interchange
CIO	Chief Information Officer
RBV	Resource-Based View
TAM	Technology Acceptance Model
FGD	Focus Group Discussions
BBA	Bangladesh Bridge Authority
PWD	Public Works Department
UNDP	United Nations Development Programme
BOT	Build- Operate- Transfer
LTM	Limited Tendering Method
DPM	Direct Procurement Method
SSS	Single Source Selection
FBS	Fixed Budget Selection
RHD	Roads and Highways Department
KPI	Key Performance Indicators

SME	Small and Medium-sized Enterprise
ADB	Asian Development Bank

Chapter 1

Introduction

1.1 Background of the Study

The information technology (IT) industry has become one of the largest providers of innovation and improved service delivery in this modern times. It is also crucial in facilitating the digital transformation between citizens and corporations. Today, governments and institutions are increasingly turning to IT solutions to boost efficiency, strengthen governance, and provide improved services to citizens. In Bangladesh, the adoption of e-Governance, digital infrastructure, cloud computing, and enterprise resource planning systems under initiatives like "Innovative Bangladesh" has exponentially increased the need for effective and transparent procurement of IT goods and services.

Procuring goods and services in the IT sector brings a distinct set of challenges that differ from those in traditional procurement. The causes of these challenges lie in the rapid dynamic development of technology which often varies technical needs, lack of consistent evaluation criteria, the possibility to become dependent on a particular consulting firms/ suppliers and the overall deficit of technical skills among the procurement staff. These issues are often the causes of the delays in the procedures, high numbers of the non-compliant submissions, and ineffective procurement performance in the regulatory frameworks of the countries such as in the Public Procurement Act (PPA) 2006 and Public Procurement Rules (PPR) 2025 used in Bangladesh. Even despite the existing challenges, the IT sector has many potential opportunities.

Innovative approaches to procurement, such as framework agreements, agile contracts, reverse auctions, and performance-based procurement strategies, are being implemented across the globe. Recognizing these challenges and opportunities is key to shifting toward performance-based procurement strategies, while enhancing transparency and securing value-for-money in the IT sector.

1.2 Problem Statement

Even though Bangladesh has made a large advancement in the digital transformation and inclusion of IT in all the sectors, inefficiencies in the procurement of IT goods and services, inefficient suppliers, and above-average contract execution still hamper the process. Soon after implementation of the projects many of them suffered overspending, time overruns or outdated technologies. The lack of IT-focused procurement policies, a lack of technical knowledge among procurement officials, and the non-flexible legal systems contribute to the worsening of these ongoing issues.

The leading cause of the issue is that our country's procurement laws, including the Public Procurement Act (PPA) 2006 and the Public Procurement Rules (PPR) 2025, were created mainly for the purchase of tangible commodities, civil works, and fundamental services. These rules tend to favor rigid, price-based selection methods, which do not work well for complicated IT systems that need technical scoring, collaboration between consulting firms/suppliers, milestone-based delivery, and flexibility. Besides that, procurement officials lack technical expertise, procurement guidelines are not IT-specific, and there is not enough legal flexibility to accommodate creative procurement strategies like modular development or agile contracting. These fundamental shortcomings are made more difficult by institutions' insufficient ability to create functional and understandable Terms of Reference (ToR), properly evaluate technical bids, or track the performance of IT suppliers after awarding the contract. Therefore, it is essential to review the localization of internationally accepted standards, identify strategic improvement opportunities, and look at the most significant obstacles to the successful purchasing of information technology in the country of Bangladesh. In addition to identifying opportunities for improving procurement performance and aligning procurement strategy with technological advancements, this dissertation examines the main obstacles to effective IT procurement in Bangladesh. The objective is to make recommendations for practical tactics and enhancements that can help stakeholders in the public and commercial sectors manage IT procurement effectively.

1.3 Research Objectives

Examining the current procurement procedures in the IT industry and identifying the most significant challenges and possible opportunities is the primary goal of this study. The particular goals are:

- To determine and examine the main challenges to procuring IT products and services within the existing public procurement framework in Bangladesh.
- To determine the main obstacles that procurement professionals faced when purchasing IT-related products and services.
- To evaluate how effectively Bangladesh's current procurement rules and policies handle IT procurement.
- To investigate new developments and international best practices in IT procurement.

1.4 Research Questions

The following are the research questions that have motivated this dissertation:

- What are the structural, legal and procedural aspects that affect the success of IT procurement outcomes in the Bangladesh public sector?
- To what extent do current laws and regulatory regimes in the context of public procurement influence the flexibility, innovation and risk management practices that are necessary in IT procurement in Bangladesh?
- What is the role of technical and institutional capacity of procurement professionals and implementing agencies in promoting the performance and value for money of IT projects in public procurement?
- Where are the recognized gaps between the current practices of Bangladesh government in procurement of IT and the international standard best practices and how are these gaps related to the effectiveness of procurement undertaking?
- Which strategic, institutional, and policy-level interventions could contribute to value creation of money, transparency, and efficiency in public sector IT procurement in Bangladesh?

1.5 Rationale of the Study

The relatively quick technological advancement of public services in Bangladesh as part of the "New Bangladesh" initiative has substantially boosted the demand for safe, stable, and modular Information Technology (IT) systems. Because of this, public procurement of IT goods and services has become an essential facilitator of national development priorities. However, the procurement models, legal frameworks and institutional capacities in place are designed primarily for the procurement of physical goods and civil works and are therefore not sufficient for the fast-changing, complex and iterative nature of IT systems.

The lack of compatibility has led to numerous problems: delayed IT project delivery, unsatisfactory technical evaluation, frequent disagreements with consulting firms/ suppliers, and poor post-award contract management. Many government institutions rely on generic Terms of Reference (ToRs), lowest-price selection, and compliance-focused procedures that are not appropriate for technology procurement. In contrast, global practices now emphasize agile contracting, modular procurement, performance-based evaluation of consulting firms/ suppliers, and iterative project delivery.

Regardless of these evolving practices, there is an apparent understanding gap in Bangladesh with respect to how public procurement systems may evolve to serve the IT sector more effectively. The academic research and discussions on policy have not appropriately looked into the real-world challenges faced by those working in procurement, nor have they offered extensive insights into the upcoming possibilities for modification.

This study discusses that gap through analyzing IT procurement by way of both theoretical and real-world lenses. It explores current procurement practices, determines key constraints, and identifies opportunities for change based on global developments and local circumstances. The findings will benefit procurement officers, donor agencies, policy makers, IT consulting firms/ suppliers, and academic researchers by contributing to the speaking on how Bangladesh is capable of transforming its procurement systems to support sustainable technological advancement.

In the successful pursuit of it, the work will achieve the aims of New Bangladesh and add to the fields of institutional interventions, online governance, and government procurement.

1.6 Scope and Limitations

Scope of the Study:

This research focuses primarily on the buying of IT-related goods and services as part of the movement of Bangladesh, as a country, operates in the public sector. About IT projects like software development, digital platforms, cloud services, and IT infrastructure, it looks at the organizational capacities, changing procurement methods, and regulatory frameworks. While the major emphasis is on the public procurement in accordance with Public Procurement Act (PPA) 2006 and Public Procurement Rules (PPR) 2025, some references are made to private sector practices for comparative understanding.

The scope covers:

- Procurement methods such as Open Tendering, Quality and Cost-Based Selection (QCBS) and emerging such as Agile, Modular and Framework Agreements.

- Institutional practices of key agencies such Challenges in specification development, technical evaluation, consulting firms/suppliers performance, and post-award monitoring.
- Opportunities for reform, including e-GP enhancement, capacity development, and legal adaptation.
- Collection of primary data by way of surveys, interviews and focus groups of procurement officials, policy makers and IT consulting firms/ suppliers.
- This research aims to present a realistic road map to improve the future procurement of IT sector in Bangladesh to add value to academic literature and policy agenda of reforms.

Limitations of the Study:

Although the study offers insightful information, some drawbacks are noted:

- Since primary data for this study were mostly gathered from professionals and organizations in Dhaka, the results might not accurately represent exhibits in regional or the countryside offices.
- Due to confidentiality laws, specific government procurement papers were not available to the general public, especially supplier performance reviews and project-level financial data.
- The study was unable to evaluate long-term project outcomes or perform a longitudinal analysis because of academic deadlines and a lack of research funds.
- While included as a part of comparison, the internal procurement strategies of the private sector could not be in the center of attention and might be in need to be researched separately in detail.

Nevertheless, the study provides a credible picture of the contemporary practice and reserves the effort of expanded inquiries and non-kidding interventions on IT procurement.

1.7 Structure of the Dissertation

This dissertation is divided into six chapters and every chapter has different purposes in solving the research problem and purpose.

Chapter 1: Introduction

In this chapter, the research is summarized by providing a brief background, the stated problem, purpose of study and research questions. It also highlights the scope, rationale, and structure of the dissertation.

Chapter 2: Literature Review

Both theoretical and practical viewpoints on IT procurement are presented in the literature study. It looks at regulatory frameworks, evolving procurement approaches, problems, and

global best practices. Important ideas like modular contracting, agile procurement, and framework agreements are examined in light of Bangladesh's public procurement environment.

Chapter 3: Research Methodology

This Chapter gives a description to the study in depth and describes methods of data collection, methods of sampling, as well as an analytic framework. The methodology aims at merging the ideas of both the quantitative and the qualitative sources of data to get a comprehensive and healthy view of the research problem.

Chapter 4: Data Analysis and Findings

This chapter presents the results derived from incorporating data from survey responses, key informant interviews, and focus group discussions. It identifies and examines the primary challenges and emerging opportunities in IT procurement.

Chapter 5: Discussion

The results are viewed in the discussion chapter in light of the underlying theories and research goals. It establishes inefficiencies, policy implications and whether global best practices can be applied in Bangladesh by relating the actual findings to the research.

Chapter 6: Conclusion and Recommendations

The overall last chapter sums up the major findings and proposes made by the research. It also defines the areas of study shortcomings and gives recommendations on further study.

Chapter 2

Literature Review

2.1 Introduction

The procurement of Information Technology (IT) goods and services has emerged as a significant enabler of the modernization of the public sector, and this is most notably the case with regard to the global digital transformation agenda. This chapter brings together what has been happening in the literature, global policy documents, and case studies to argue how technological innovation, governing structures, law, and institutional capacities interact to influence IT procurement outcomes. It addresses four main areas (i) the digitalization of procurement systems and expansion of e-procurement; (ii) governance, regulatory, and institutional drivers of procurement performance; (iii) the effects and adoption challenges of emerging and disruptive technologies like artificial intelligence, blockchain, and IoT; and (iv)

sector-specific factors including sourcing strategies and procurement of complex information systems.

2.2 The digitalization of procurement systems and expansion of e-procurement

The OECD Digital Transformation of Public Procurement (2025) [1] examines how governments are moving from their traditional or partially digital system to a fully digital procurement system. It says that digital tools go beyond cutting time and cost; they also enhance transparency, share data across systems, and pave the way towards better decisions. Poor coordination among agencies, old-fashioned technology, and digital skills among personnel are some of the challenges identified in the report. Opportunities like using a single system to manage the entire process, enhancing the way data is handled, and using open data to promote innovation and competition within the public procurement are also brought out.

In the research conducted by Gilbert and Celestin (2025) [2], the focus of the study is on the use of e-procurement systems by public institutions in COMESA countries, their advantages and limitations. Adoption increased to 70 percent in 2024 compared with 30 percent in 2020, reducing the average procurement time to 15 days compared with 30 days and on transparency. The most prominent ones are low quality of the internet and IT system, difficulty to change, old laws, insufficient funds, and security in the form of cyber attacks. The authors propose to address the problem with the help of the existing solutions, such as the improvement of ICT infrastructure, modernization of legal frameworks, employee training, enhancement of cyber security, and the tight coordination between the public and the private sector, to ensure that e-procurement will turn out more effective and sustainable over the long term.

This paper [3] will discuss the operation of digital procurement within project-based set up both in terms of advantages and challenges. Advantages include faster processes, improved transparency and improved communication to suppliers. Issues include shortage of technical accents, change resistance and compatibility of systems. According to the study, the results may be maximized because of to the training of personnel, the improvement of infrastructure, and a convergence of processes with the use of digital technologies which would help to conduct the implementation of digital procurement in the project contexts.

This paper World Bank's procurement survey (2021) [4] examines the reaction of the public procurement systems at the beginning of COVID-19. According to the survey of experts in various countries, it was identified that emergency situations compelled governments to accelerate their operations mainly through emergency procedures. This solved the immediate demand problem and decreased transparency and competition. Issues such as shortages in

supply, rising in prices, and poor coordination of agencies were witnessed. There were some opportunities, including testing digital tools, inclusion of local suppliers networks, and better preparation in emergencies. The authors suggest the topicalization of the speed and oversight in order to equip future crisis-related procurement systems, which need to remain unbiased and responsible.

2.3 Governance, Regulatory, and Institutional drivers of procurement performance

In this research [5], the author discusses the legal regulations, advantages, and issues of using ICT in-house procurement among Finnish municipalities. The 16 official interviews reveal that in-house procurement has speedier procedures, common systems and fewer bidding demands. Nonetheless, there are problems associated with poor contracting, high prices, poor decision-making ability by small shareholders and lack of competition. The authors suggest more transparent laws, more elevated ownership control, and better governance so that transparency and efficiency could be enhanced.

This paper [6] is an investigation into the difficulty of purchasing ICT systems in the public sector based on interviews with the stakeholders in Norway. It encounters the conflict between strict procurement regulations, and the need for flexible, changing ICT demands. The issues are unclarity of needs, insufficient market dialogue and the ability to adapt to changes. Improved initial involvement of suppliers, clearer needs, and more flexible procurement procedures are recommended by the authors in order to enhance the outcomes.

This paper [7] explores how public organizations identify requirements when purchasing information systems. It describes how two case studies in Norway reveal an ongoing tension over the need of precision in specifying provisions of fairness and for changed needs. Rigorous set requirements may lead to mismatch, whereas too much flexibility may risk fairness. The authors suggest a balance of clarity and flexibility through more effective planning, dialogue with the market and phased procurement processes.

The type of research reviewed in this paper [8] is the procurement of information systems and information technology services in the public sector with regard to the outsourcing practices. It identifies lacking based on case studies that point out disparities and similarities between the public and the private sector. Such critical issues as shortage of skills, political factors, and risks posed by contracts are faced. The authors urge the need of additional research activity, increased utilization of standards, improved management procedures, and elaborated cases studies that can lead to effective, transparent, and streamlined IT procurement.

2.4 The effects and adoption challenges of emerging and disruptive technologies like artificial intelligence, blockchain, and IoT

In the present paper [9], the authors will examine new technologies like big data analytics, robotics, the Internet of Things (IoT), blockchain, and smart contracts that are changing procurement. These are tools that increase efficiencies, automating transaction and relationships with suppliers. The upside is the improved decision-making, streamlining, and the increased transparency. Adoption is however slacked by issues such as high costs, lack of technical expertise, resistance to change and un-mature technology. The research findings note that although these innovations present significant opportunities to enhance the procurement strategy and performance, organizations should invest in infrastructure, training of the personnel, and governance so that all the potentialities can be exploited, and the activities can respond to the procurement environment in the Industry 4.0.

The effect of artificial intelligence (AI) on the procurement process is covered in this research [10] such as automation of processes, better decision making and efficiency. They comprise contracts management, risk measurement, spend analysis, and supplier selection AI applications. Advantages are quicker process, fewer errors, saving money, and improving relationship with the suppliers. Some issues are data quality problems, expensive implementation, unavailability of skilled personnel and ethical issues of transparency and fairness. The authors propose a middle-ground between AI-based tools and human control and robust governance and training to optimize the opportunities and minimize the possible risks to ensure that AI contributes to overall strategic procurement objective and enhances the value of money.

In this research [11], I am examining the issues that arise in the process of procurement professionals in Malaysia integrating emerging technologies like e-procurement, IoT, big data analytics, AI, blockchain, and 3D printing into the procurement field. It surveys 15 professionals through interviews to find six major problems: shortage of expertise, inability to focus and incorporate technologies, inadequate electronic data interchange (EDI), security issues, poor support in top management and financial restrains. Though such technologies can enhance the efficiency, transparency and decision-making, the gap in infrastructures, weaker place on change and concerns on cost impede their adoption. Their training, the leaders' dedication to them, the enhancement of rules, and the investment in them are all necessary for their full benefits.

2.5 Sector-specific factors, including sourcing strategies and procurement of complex information systems.

These are integrated Norwegian studies that examine the primary concerns of the public sector procurement of information systems, using different methods: interviews, case studies, and the Delphi method, as applied by procurement administrators and CIOs. The problems are usually unclear or incomplete requirements, inflexible procurement requirements, excessive focus upon cost rather than long-term value, and the complexity of integrating systems. Financial, lack of knowledge and skills in technology, inadequate relation and poor management of contracts are also hampered. Formal processes impose restrictions on the suppliers, and interfere with innovation. To create trade-offs between fairness and flexibility within the dynamic technological environment, the authors suggest that organizations improve their requirement planning, earlier involvement of the suppliers, more flexible ways into a purchase, and effective governance. [12] [13]

The present research [14] investigates the key issues that occur in the process of buying IT by the main organizations of the community to compare the perceptions of sellers and suppliers. The usual things that go wrong are excessively dogmatic rules, severe transaction costs and the inability to express the system requirements clearly. The unsatisfactory results are usually ascribed to poor specifications that may result in delays and cost overruns. Surveys indicate that consulting firms/suppliers and managers have a clash in the quality of the requirements and most projects require significant adjustments halfway. New measures include repeating the Clinger-Cohen Act to encourage the best value buying, purchasing under the partnership of suppliers, and flexible bidding. The authors emphasize on more planning, clear requirements, increased collaboration so as to make IT procurement quicker, and less expensive and more successful.

2.6 Gaps in Existing Research

The literature indicates that research on IT procurement, particularly in the public sector, still has many gaps. Most of the research has been done on developed countries with sound digital systems and little is known of the distinctive challenges offered in developing countries such as Bangladesh, where laws, infrastructure, and skills are different. Studies either consider procurement laws and new technologies separately and there is little that integrates both to observe how the legal regulations can keep up with the rapidly transforming technology. Numerous studies are conducted on the buying process and they do not provide much evidence

about long-term outcomes like whether systems bring value in terms of money or are useful in their utilization in the long run. Other researchs are talked of like using Agile and modular procurement as best practices, but few examples of the best practices in actual implementation in low-income environments and in real-life projects are found. Although much of the literature cites a gap in technical skills they do not provide much information as to how to train them or provide a detailed plan of the training process. There is also a limited likelihood of learning about IT procurement in the private sector since very few comparisons between the two sectors are made. Lastly, little research has been conducted in detail on the means to address data governance, cybersecurity, and privacy risks involved in a public IT contract.

2.7 Theoretical Framework

This theoretical framework of the study integrates concepts of procurement theories, technology adoption models, and governance theories to improve the comprehension of the potential challenges and opportunities in IT procurement especially in the public sector.

- In describing the way governments purchase goods and services, there is the Public Procurement Theory which addresses the purchasing process in terms of fairness, transparency, and competition, as well as value of money. Such principles have occasionally created tension with the challenge of flexibility and innovation in IT procurement that are especially met with inflexible laws such as PPA 2006 and PPR 2025.
- Resource-Based View (RBV) demonstrates that the specific skills and resources of any organization can be its success drivers, namely skills in the technical knowledge, contract managing, and digital knowledge. The short depending areas of such skills may result in inadequate needs, inefficient consulting firms/ suppliers assessment and ineffective project outcomes.
- Technology Acceptance Model (TAM) underscores that individuals advance technology based on the usefulness and easiness they perceive it to be. That is the case of e-procurement platforms and tools such as AI or blockchain.
- Institutional Theory concentrate on the impact of rules, norms, and political pressures in making decisions, where in most cases the emphasis is placed upon compliance rather than innovations.
- Governance and Risk Management give emphasis to the factors of accountability, performance checks, and stakeholder feedback to mitigate risks such as consulting firm/supplier lock-in or even cybersecurity threats.

The specified framework presupposes those institutional rules have a direct impact on the procurement procedures and affect the technology adoption, whereas the organizational capacities define the levels of the quality of the procurement planning, evaluations, and contract management. The use of technology, in its turn, increases efficiency, transparency, and decision-making in the process of procurement. Governance mechanisms such as risks controls mediate the relationship between procurement processes and outcomes as they minimize risk and enhancement of long-term sustainability. Through such a combined approach, the research can determine the interaction of legal, organizational, technological and governance aspects that affect the success or failure of procurements in the IT field in terms of transparency, efficiency, innovation and value-for-money in IT systems.

2.8 Research Hypotheses

Based on the theoretical perspectives and the empirical evidence analyzed in the literature, this paper suggests some testable hypotheses to study the major factors affecting IT procurement in the public sector of Bangladesh. The literature indicates that the conventional, compliance-based laws on public procurement will not usually possess the flexibility that IT procurement needs; hence, it is assumed that the higher the degree of regulatory rigidity, the lower the effectiveness and flexibility of IT procurement. The importance of an institutional and technical capacity is also stressed in the previous literature, which leads to the hypothesis that the increased level of the capacity of procurement professionals is positively correlated with better IT procurement performance and value-for-money. Moreover, the literature indicates divergent motivations and information asymmetry between the procurement officials, suppliers, and policy makers indicating that the stakeholder groups have a vast diversity in their perception of IT procurement challenges. Moreover, the systems of international best practices emphasize adaptive contracting, risk management, and outcome-based procurement, which prompts the hypothesis that the closer the organization is to international IT procurement best practices, the better the transparency and overall procurement performance. Lastly, in line with the literature on public value and the governance-based procurement, it is suggested that increased regulatory flexibility and institutional capacity are among the factors that help to make IT procurement in the public sector more successful in terms of value for money in Bangladesh.

Chapter 3

Research Methodology

3.1 Introduction

This chapter explains the approach to running the study on the topic of Procurement in the Information Technology (IT) Sector: Challenges and Opportunities. It discusses the manner in which data was gathered and processed (quantitatively and in qualitative terms). Opinions of the procurement officials, IT consultants/ suppliers and policy experts were neutralised through surveys and interviews. The chapter also details the sampling plan, data analysis methods and procedures that will transform the results into accurate and reliable data. Combining the figures with the personal experience, the strategy provides a detailed view of the situation in the IT procurement and where improvements may be made.

3.2 Research Design

The research design employed in this study is the mixed-method research design that incorporates both qualitative and quantitative designs to provide a complete picture of IT procurement challenges and opportunities. In the quantitative section, surveys are found to capture measurable information on the areas like procurement schedules, supplier performance, and the usage of technology. The qualitative segment uses interviews and analysis of documents to gather detailed insights from procurement officials, IT consultants/ suppliers, and policy experts. It was determined that this design will be applied due to the fact that the IT procurement process is based on the existence of two types of factors, both measurable (e.g. cost, delivery time) and contextual (e.g. governance, technical capacity, legal constraints). In integrating the two approaches, the research would not only reflect statistical trend but the experiences, perceptions and recommendations of the key stakeholders. The study is both descriptive and exploratory: it takes a descriptive approach to present the situation in IT procurement in Bangladesh, and an explorative approach to find gaps and potential changes. Information has been gathered at various sources to enhance reliability, reports by the government, academia and feedback by both the public and the private sector participants.

3.3 Data Collection Methods

In this research, there are used both primary and secondary sources of data collection to get a comprehensive overview of the challenges surrounding IT procurement and opportunities.

1. Primary Data

Primary data was obtained by direct surveys of stakeholders by:

Surveys: Devised surveys of the procurement officials, IT consulting firms/suppliers along with policy experts were issued that would provide quantifiable information on the procurement schedule, supplier performance, legal limiting factors and technology adoption.

Interviews: Two or three semi-structured interviews with the participants of the choice were also carried out to obtain detailed information about practical difficulties, the stories of success and potential reform.

Focus Group Discussions (FGDs): Procurement officers and IT service providers were invited in groups so that a free discussion and sharing of views can be facilitated.

2. Secondary Data

Analysis of secondary data was derived through:

Reports and documents in the government (e.g., PPA 2006, PPR 2025, e-GP guidelines).

IT procurement scholarly journals, books and conference papers. International best practice reports and reports (e.g., OECD, World Bank publications).

The primary and secondary sources enabled the study to compare results and make sure that conclusions are made on the basis of high quality and rather detailed information.

3.4 Sampling Strategy

In this paper, followed a purposive sample method, where a knowledgeable and experienced participant is selected in terms of IT procurement. The purpose was to collect information of persons and companies that are actively engaged in planning, execution, or managing the IT procurement projects in the country of Bangladesh.

1. Target Groups

The sample contained:

1. The officials of the procurement departments in state agencies and mostly in ICT involved projects.
2. IT consulting firms/ suppliers and service providers which provide hardware or software or IT services to the clients in the public and private sectors.
3. Consultants and policy specialists involved in the implementation of the reform of public procurement or projects aimed at the digital transformation process.

2. Sample Size

Surveys: Distributed to about 100 participants with at least 81% of them respond.

Interviews: It was done among 10 key informants selected on the basis of their knowledge and involvement in IT procurement.

Focus Group Discussions: Two FGDs took place (6-8 participants in each) to encourage the variety of views.

3. Rationale

The reason I selected purposive sampling was that the specific field of knowledge was needed in conducting this particular study, which would not be possible with a random sample. This approach was used to make sure the data to be obtained was pertinent, believable and in line with the research aims.

3.5 Data Analysis Method

To coincide with the mixed-methods of data collection, both quantitative and qualitative methods of data analysis were used in this study.

3.5.1 Quantitative (Descriptive) Analysis

The first processing of the survey data was through coding and entering into the Microsoft Excel. The frequency, percentages, and standard deviations are descriptive statistical techniques that were applied to summarize the perceptions of respondents on IT procurement issues, legal and procedural limitations, institutional capacity, and value-for-money issues. Tabular and graphical representations were created in order to give a comprehensive overview of the procurement practices and stakeholder reaction.

3.5.2 Qualitative Analysis

Transcripts of interviews and FGD were read and coded aiming at promoting major themes, including legal issues, skills deficiency, best practices, and possibilities of reform. Thematic analysis approach was employed to categorize similar answers and point out to the common issues. In this analysis, there was a comprehensive insight into contextual and institutional factors that could not be exhaustively captured using survey data.

3.5.3 Inferential Analysis

Inferential statistical analysis using the selected survey variables was used to provide the explanatory nature of the research questions. Institutional capacity, regulatory flexibility, procurement effectiveness, and value for money are some of the key constructs that were analyzed using inferential techniques to establish relationships and differences among them. The appropriate tests of statistics (like Chi-square tests, t-tests, or correlation analysis) were used to test:

whether perceptions significantly vary among the stakeholders (procurement officials, suppliers, policymakers) and

the relationship between institutional and regulatory issues and perceived IT procurement performance.

These analyses enabled the study to go beyond the descriptive reporting and make evidence-based inferences on the factors that affect IT procurement outcomes in Bangladesh.

3.5.4 Triangulation and Integration

Primary conclusions drawn under the descriptive statistics, inferential analysis, qualitative themes, and secondary sources were triangulated to increase validity and reliability. The qualitative understanding of quantitative patterns was the interpretation and explanation of patterns with the help of qualitative insights, which guaranteed a methodological consistency and enhanced credibility of conclusions.

3.5.5 Results Presentation

Chapter 4- Data Analysis and Findings refers to the analyzed data in terms of tables, graphs, and direct quotes of the participants. This will make both the evidence of the numerical nature and the perspective of the stakeholders be reflected clearly.

3.6 Ethical Considerations

This study was ethical in nature because it was conducted in a way that all the participants were treated fairly, respectfully, and in a confidential manner. The key ethics undertaken are:

1. Informed Consent: The intent of information about the aim of the study, the use of the data, and the freedom to withdraw at any stage was explained to every individual before his or her involvement in surveys, interviews, or focus group discussions. A complete voluntary participation was used and the consent was either given verbally or written.
2. Anonymity and Confidentiality: None of the participants were listed by name and personal details. Data was also stored safely, where only the researcher could access it. When displaying results, the manner of presentation was in generalization or quoting what was said without mentioning individuals.
3. Data Protection: All digital data such as questionnaire answers and interviews recording materials were stored in the password-protected files. Physical versions were kept under lock and key in a cabinet and will be deleted at the end of the study.
4. Avoidance of Harm: Special attention was paid to making sure that people were not subjected to any discomfort or danger in participating. Discussions were carried out in polite and professional ways, and touchy questions were not explored.

3.7 Limitations of the Methodology

Although the current study was carefully planned to carry out an overview of IT procurement issues and opportunities, some limitations should be noted:

1. **Small Sample Size:** Because of time and budget shortage, the amount of respondents to the questionnaires and interviewees was low. This can influence the possibility of representing all the perspectives of the IT procurement industry in Bangladesh fully.
2. **Purposive Sampling Bias:** Selection of a purposive sample proved that the participant would have a pertinent expertise, but there might have been some bias in the choice of the selection. The opinions of the people who are not directly concerned with the procurement, but who are impacted by the procurement might not be obtained.
3. **Self-Reported Data:** Both the surveys and the interviews were based on self-reported data, which could be affected by the personal bias, selective memory, or the tendency to show self in a positive light.
4. **Short Period of Time:** The study was limited to a specific time frame, which denied the chance to monitor the procurement processes on long-term basis and follow the results of the undertaken projects.
5. **The availability of Secondary Data:** Some secondary data also proved to be either unsubstantial or non-existent especially in areas that encompass sensitive issues related to procurement thus possibly diluting some of the analyses.

Though these limitations were present, the mixed-methods design was a fair blend of qualitative and quantitative findings, which sounded credible and reasonable.

Chapter 4

Data Analysis and Findings

4.1 Introduction

The current chapter reports the findings of study on the topic of Procurement in the Information Technology (IT) Sector: Challenges and Opportunities conducted within the context of Bangladesh. It combines the data gathered through use of surveys, interviews and focus group discussions alongside the appropriate secondary data. Data was collected from procurement officials, IT consultants, and policy experts across both public and private sectors. The analysis is organized according to respondent profiles, organizational practices, procurement methods, capacity and readiness, challenges, opportunities, and overall effectiveness. The research

reflects the organization of the research questions; initially, major issues faced in IT procurement are to be identified, and later, the opportunities of overcoming the deficiencies are to be discussed. Surveys provide quantitative data, which is interpreted by descriptive statistics to demonstrate the quantitative trends. The qualitative data is analyzed using thematic evaluation in the form of interviews and the focus groups to indicate the themes that re-appear, practical experiences and illustrations made by the people in the public and private sector. Infusing both quantitative data and views of the stakeholders, the chapter has given a clear, as well as balanced insight of the current position of IT procurement in Bangladesh and prepares the ground towards the discussion and recommendations in the second chapter.

4.2 Profile of Respondents

A total of 81 people responded to the structured survey, where 10 key informants and 2 FGDs (6-8 people each) were held to offer qualitative insights. Most participants had 6 to 10+ years of procurement experience, ensuring responses reflect both practical and policy-level insights. Designation and roles included procurement professionals, deputy secretaries, and consultants actively engaged in IT projects.

Respondents represented a mix of:

- Government procurement units (e.g., a2i, ICTD, LGED, Bangladesh Bridge Authority, Public Works Department (PWD), Ministry of Water Resources, Planning Commission, Ministry of Railways)
- Public institutions involved in e-GP
- Private IT consulting firms/ suppliers (software, infrastructure)
- Technical advisors and policy-level stakeholders (e.g., BPPA, a2i, ICT Division, Planning Commission)
- Development Partner (UNDP, ADB)

Breakdown:

Respondents	Count	Percentage (%)
Procurement Officers	28	34.57
IT Managers	16	19.75
Policy-level Officials	10	12.35
Private IT consulting firms/ suppliers	27	33.33

Table 1: Breakdown of Respondents

81 responses

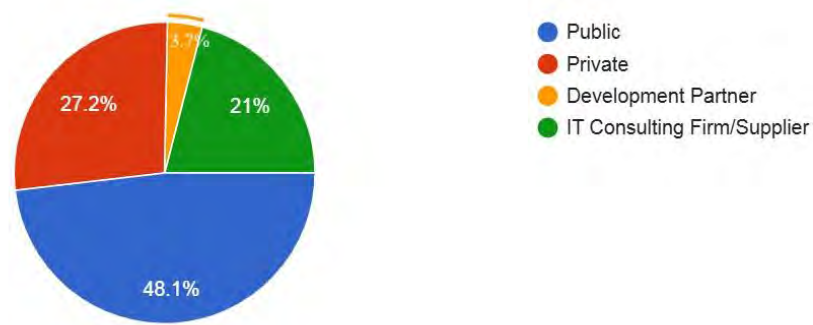


Figure 1: Sector of the Respondents

81 responses

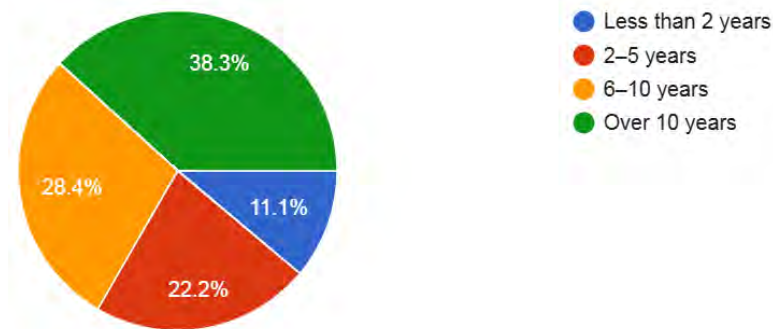


Figure 2: Years of Experience of the Respondents

4.3 Quantitative Findings: Survey Results

4.3.1 Organizational IT Procurement Experience

- Almost all organizations confirmed that they procure IT goods or services.
- Software development, IT hardware, cloud services, website/portal maintenance and networking infrastructure are the most commonly purchased goods.
- Some of the respondents mentioned the emerging requirements including cybersecurity solutions and AI/data analytics solutions.

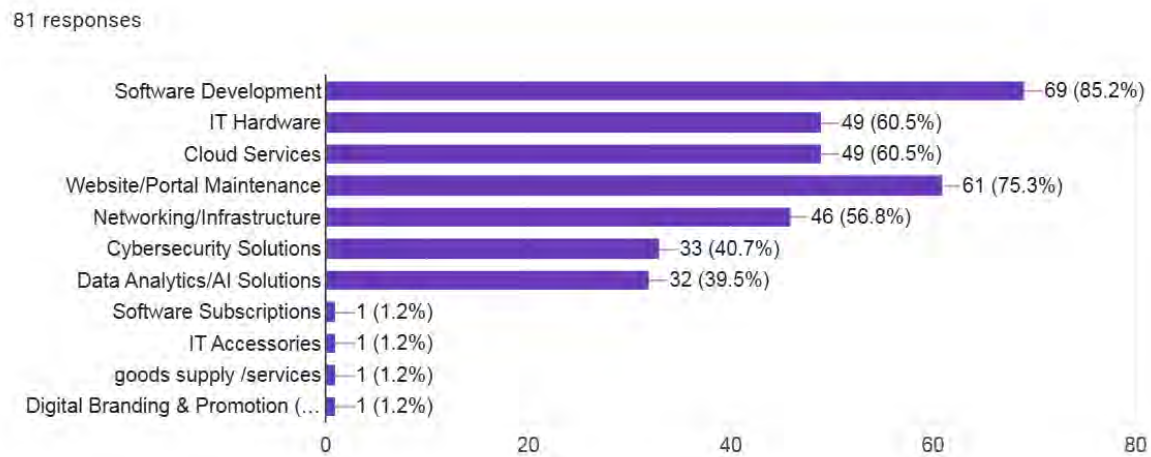


Figure 3: IT procurements most frequently conducted

4.3.2 Challenges in IT Procurement

Respondents rated common IT procurement challenges on a **five-point scale** (**1 = No Impact means Not a Challenge, 5 = Very High Impact means Major Challenge**).

Challenges	Point Scale				
	No Impact	Low Impact	Moderate Impact	High Impact	Very High Impact
Poorly defined specifications/ToRs	5	9	17	34	16
Lack of in-house IT expertise	9	9	23	32	8
Rigid legal/procedural framework	7	7	29	30	8
Over-reliance on IT Firms	5	9	26	27	14
Limited use of innovative procurement models	4	6	29	34	8
Delays in approval/evaluation	3	-	15	37	26
Monitoring and accountability issues	3	7	26	26	19
Consulting firm lock-in and poor interoperability	3	9	21	26	22
Cybersecurity and data governance risks	4	10	19	28	20

Table 2: Challenge Ratings Summary

The results of the survey indicate that IT procurement is experiencing several critical issues in Bangladesh, and the respondents rated the effects of IT procurement as no impact, high impact, and very high impact.

- Poor specifications/ToRs: This proved to be a significant problem with more than 60% of the respondents rating the problem as high or very high impact. This brings out poor requirement planning and lack of clarity in the project design.
- Not having in-house IT expertise was also perceived to be a major factor with over half of the respondents saying it had a moderate to high impact, indicating the lack of technical knowledge among procurement teams.
- Rigid legal and procedural frameworks were rated both moderately and highly, with majority rating at moderate to high impact indicating that the current laws (PPA 2006, PPR 2025) tend to constrain flexibility in IT projects.
- Over-reliance on IT firms was identified as a risk, because it results in dependency and possibly consulting firm/supplier lock-in. More than half of the respondents considered that this is a high-impact issue.
- The limited use of innovative procurement models, including agile or modular contracting, was an issue as well, with almost two-thirds of the participants rating it as moderate to high impact.
- One of the most acute challenges identified was delays in approval and evaluation, and nearly 80 percent of the respondents rated the influence as high or very high.
- Monitoring and accountability concerns were also consistently rated as having high impact with areas of weakness in post award contract management.
- Consulting firm lock-in and poor interoperability was of great concern to the respondents, who said that there was a problem with integrating systems, and over-reliance on one firm.
- Most respondents also rated cybersecurity and data governance risks as high or very high, indicating an increasing worry on data protection during IT procurement.

In general, the results show that the issues are not just technical (e.g., specifications, interoperability, cybersecurity) but also institutional (e.g., inflexible procedures, delays, lack of innovative models). These findings corroborate the previous literature, but also indicate regional reality, so that reforms need to focus on both capacity building and flexibility in the law in order to make IT procurement more productive.

4.3.3 Opportunities in IT Procurement

Opportunities	Count	Percentage (%)
Implementing e-procurement solutions	62	76.54
Strengthening consulting firms/ suppliers relationships	54	66.67
Investing in procurement training	55	67.9
Adopting cloud-based solutions	31	38.27
Improving contract management	56	69.14
Focusing on cybersecurity in procurement	43	53.09
Enhancing data analytics for decision-making	43	53.09

Table 3: Opportunities Ratings Summary

The survey findings highlight several important opportunities to strengthen IT procurement in Bangladesh, with respondents emphasizing both digital adoption and capacity development.

- **Implementing e-procurement solutions** was seen as the most significant opportunity, supported by **76.54%** of respondents. This shows strong confidence in expanding and upgrading the e-GP system to make procurement faster, more transparent, and more efficient.
- **Strengthening relationships with consulting firms and suppliers** was identified by **66.67%** of respondents, reflecting the need for long-term partnerships and improved collaboration to enhance delivery.
- **Investing in procurement training** was also chosen by **67.9%**, underlining the urgent need to build technical and managerial skills among procurement professionals.
- **Improving contract management** ranked high as well, with **69.14%** support, showing that better post-award monitoring and accountability can ensure value for money.
- **Focusing on cybersecurity in procurement** and **enhancing data analytics for decision-making** were each selected by **53.09%** of respondents. This highlights growing awareness of digital risks and the role of data-driven procurement.
- **Adopting cloud-based solutions** was recognized by **38.27%** of respondents, showing emerging interest in scalable, flexible IT infrastructure to support procurement activities.

On the whole, the findings indicate that the stakeholders perceive both the opportunities related to digital tools (e-procurement, cloud, analytics) and those to institutional changes (training, contract management, supplier relationships). Combined, these constitute a route of IT procurement becoming a more strategic and innovation-oriented operation in Bangladesh.

4.3.4 Familiarity with Advanced Procurement Approaches

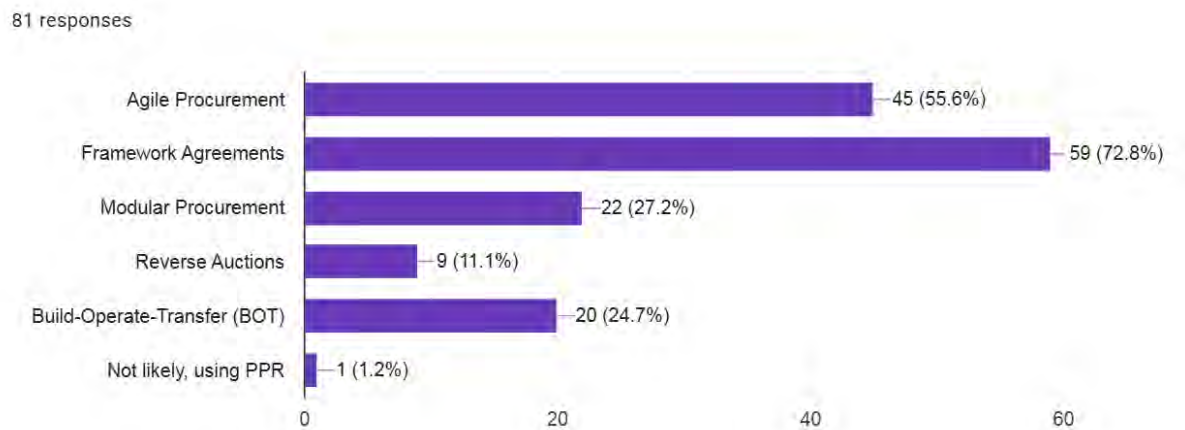


Figure 4: Familiarity with Advanced Procurement Approaches

The survey also discussed the familiarity of different respondents with various advanced procurement strategies. The results show that:

The most widely known was Framework Agreements where 72.8% of the respondents reported to be familiar with it. This implies that there is a high sensitivity to long-term and multi-consulting firm/supplier contracting approaches in IT procurement.

Agile Procurement came next, with the knowledge of 55.6% of the respondents. This indicates an increase in the popularity of flexible, iterative procurement approaches that are appropriate in IT projects. Modular Procurement was known to 27.2% and Build- Operate- Transfer (BOT) was known to 24.7% of the respondents. These are less popular in Bangladesh yet they demonstrate new opportunities. The least known was the Reverse Auctions, as only 11.1 percent of the respondents were aware of this model, which is an indication that there is very little exposure to dynamic bidding models.

In general, the results indicate that despite the increasing information on flexible procurement methods/contracts such as agile and framework agreements, other innovative approaches are not explored in detail. This creates a capacity building, training and policy advisory opportunity to increase the application of the sophisticated procurement models in Bangladesh.

4.3.5 Use of Procurement Methods

Procurement Method	Frequent Use (% of Respondents)
Quality and Cost Based Selection (QCBS)	86.4
Open Tendering Method (OTM)	87.7
Single Source Selection (SSS)	30.9
Direct Procurement Method (DPM)	38.3

Table 4: Frequent use of the Procurement Method

For IT Services: The most widely used method was Quality and Cost-Based Selection (QCBS), followed by occasional use of Single Source Selection (SSS) and Fixed Budget Selection (FBS).

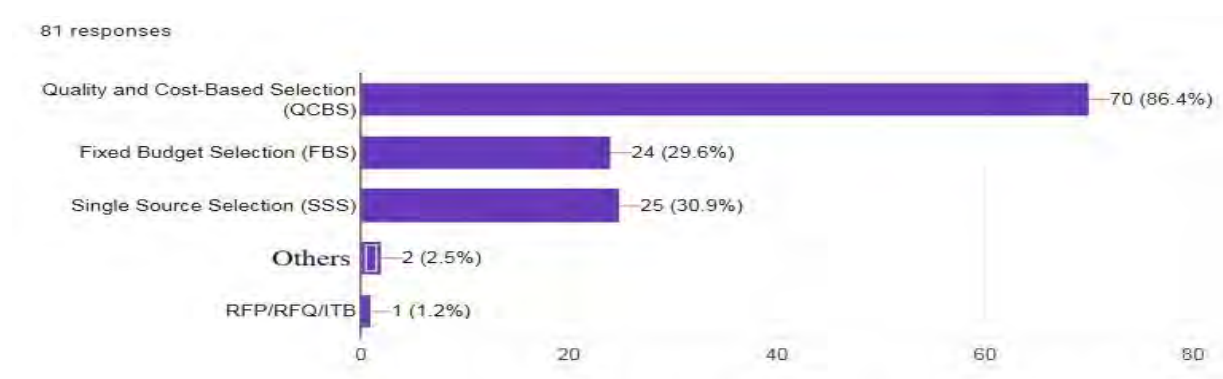


Figure 5: Most commonly used for the IT Services procurement

For IT Goods: The Open Tendering Method (OTM) dominates, while Limited Tendering and Direct Procurement Method (DPM) are applied in specific cases.

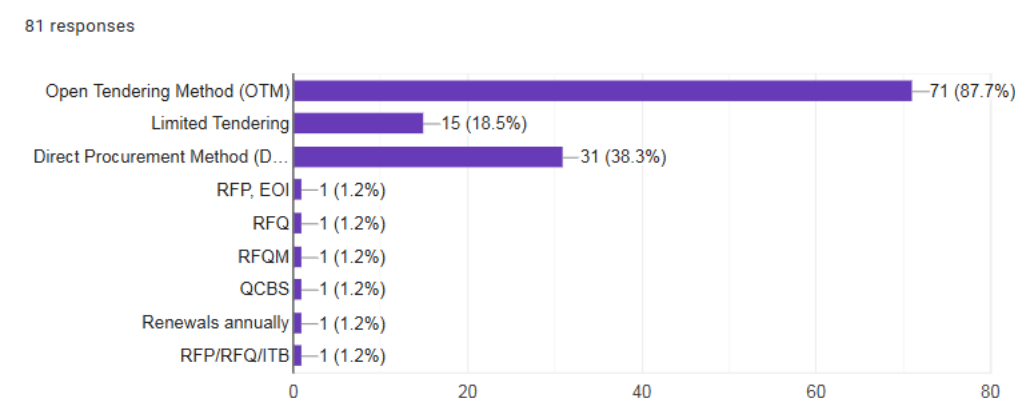


Figure 6: Most commonly used for the IT Goods procurement

Around 77.8% of respondents confirmed having a technical evaluation committee, though some noted it functions only occasionally.

4.3.6 Capacity and Readiness Scores

The survey conducted to determine the institutional readiness in IT procurement was done with regard to the organizational capacity in seven critical dimensions. The respondents rated in each of the areas using a five-point scale (Very Low to Very High).

Organizational Capacity Criteria	Point Scale				
	Very Low	Low	Moderate	high	Very High
Drafting IT-specific Terms of Reference (ToR)	2	5	21	29	24
Technical proposal evaluation of IT bids	1	5	10	33	32
Post-award monitoring of IT contracts	2	5	28	26	20
Use of e-GP system for IT Procurements	5	11	23	17	25
Familiarity with agile/iterative procurement models	8	9	24	22	18
Managing interoperability and system integration	4	10	12	30	25
Applying cybersecurity and data protection measures in contracts	2	11	23	23	22

Table 5: Organizational Capacity Ratings

The table is a self-assessed organizational capacity levels against seven large activities concerning IT procurement.

Drafting IT-specific Terms of Reference (ToR): Among all the answers, there was a total of 53 participants (29 high + 24 very high) who said that they had a strong capacity in writing IT-related ToRs. This indicates that the majority of organizations are confident about the definition of technical requirements and deliverables but still 28 respondents (2 very low + 5 low + 21 moderate) rate themselves at lower and moderate levels of capacity, which leaves something to be desired in some agencies.

Technical Proposal Evaluation: This is the best area in the overall capacity and 65 respondents (33 high and 32 very high) rated themselves positively. It was only 16 respondents (1 very low + 5 low + 10 moderate) that had lower levels. This means that majority of organizations have set mechanisms and technical skills to assess IT proposals efficiently.

Monitoring of IT Contracts after award: Here the distribution of answers is much more balanced, 46 respondents (26 high + 20 very high) report larger capacity and 35 respondents (2 very low + 5 low + 28 moderate) report smaller or average ability. This indicates that although most organizations conduct post-award monitoring, still a large percentage of the organizations have difficulties in supervising and monitoring contracts at all times.

Use of e-GP System for IT Procurements: The level of capacity is mixed 42 respondents (17 high + 25 very high) at higher capacity and 39 respondents (5 very low + 11 low + 23 moderate) at lower to moderate. This implies that even though e- GP platform is common, not every organisation has been completely proficient to use the platform effectively in carrying out IT-specific procurement processes.

Agile/Iterative Procurement Models: The capacity in this region is relatively very low in comparison to others. Only 40 respondents (22 high + 18 very high) rated themselves at higher levels, while 41 respondents (8 very low + 9 low + 24 moderate) indicated limited familiarity. The data reveals the awareness and the application of agile or iterative procurement models to be developing across institutions.

Interoperability and System Integration Management: Out of the total 55 respondents (30 high + 25 very high) indicated high capacity and 26 respondents (4 very low + 10 low + 12 moderate) indicated less capacity. This implies that over fifty percent of the organizations are able to manage the interoperability problems successfully, but the proportion of those that experience technical difficulties in regard to integration remains significant.

Implementing Cybersecurity and Data Protection under Contract: In this region, there is moderate capacity levels where there are 45 respondents (23 high + 22 very high) at upper levels and 36 respondents (2 very low + 11 low + 23 moderate) at lower levels. This implies that though there is awareness on cybersecurity, there is still no general agreement on its application in IT procurement contracts.

4.3.7 Effectiveness of Current IT Procurement Processes

Respondents were asked to rate the effectiveness of the IT procurement processes in their organizations on a scale of 1 (least effective) to 10 (most effective).

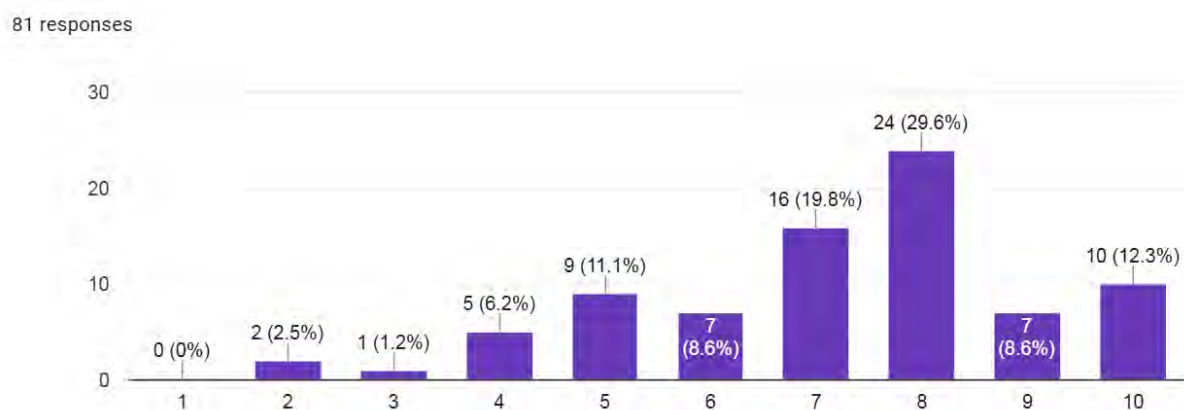


Figure 7: Effectiveness of current IT procurement processes

Figure- 7 illustrates the results that suggest that the distribution is bell-shaped with a large proportion of the ratings falling within the range of 7-8.

- 8 was the most frequent rating, chosen by 29.6% of respondents, which indicates the opinion of many stakeholders that the procurement processes are rather effective. There is 19.8 percent with the effectiveness rated 7 and 12.3 percent with the highest score of 10 and 8.6 percent with the highest score of 6 and 9 respectively.
- Procurement was rated with a low effective score by just a small minority of less than 5 percent who gave scores 1-3.

On the whole, the effectiveness score was average (7) which indicates moderate effectiveness. Both high ratings on processes identified the usage of QCBS and e-GP as the strength and low ratings were more related to delays, poor monitoring, and lack of specifications. These results indicate that although the base of the IT procurement in Bangladesh is operating at a fairly satisfactory level, there is still much to be achieved on the planning, monitoring, and capacity building front to increase the effectiveness to the best practice levels.

4.4 Qualitative Insights: Interviews and FGDs

4.4.1 Specification Challenges

Almost all interviewees pointed out ineffective writing of functional specifications as the greatest source of failure. According to A2i and ICT Division officials, several procuring entities replicate ToRs without knowing requirements of systems.

One Consulting firm noted: "It is common to get RFPs in which technical requirements are not clear. Buyer team is not able to describe what the end-user actually requires".

4.4.2 Skills Gap and Over-Reliance on Consulting Firms/Suppliers

The lack of in-house IT expertise led to the officials acknowledging over-dependence on external consulting firms/suppliers. This usually closes into poorly negotiated contracts and post implementation dependency.

4.4.3 Weakness in Evaluation and Post-Award Monitoring

The vast majority of government agencies lack qualified technical review teams of software architecture, integration design, or data security strategy. Post-award monitoring is more documents-based and is not technologically validated.

4.4.4 e-GP Benefits and Shortcomings

The respondents commended e-GP that minimized manipulation in the tender process. Nonetheless, a number of gaps were identified:

- Poor flexibility to work on QCBS scoring sheets.
- Failure to encompass complicated evaluation matrices.
- Time lagging user interface and uploading of large files.

4.4.5 Use of Innovative Methods

Very small numbers of officials knew what Agile procurement or framework agreements or reverse auction was. There was great interest in these techniques of learning.

4.5 Case Highlight: Roads and Highways Department (RHD)

Using findings from the BRAC University thesis uploaded: [15]

- e-GP reduced procurement delays by 49.46%
- Cost savings reached 77.35%
- However, IT-related tenders faced significant delays due to re-tendering caused by poor specifications

This confirms the need to enhance early-stage planning and technical documentation in IT projects.

4.6 Conclusion

In this chapter, the analysis of the survey data, interviews, and secondary sources was given with the aim to evaluate the current situation in IT procurement in Bangladesh. The results verify that the IT procurement is growing at a fast rate yet there are still major structural and operational issues with the procurement. The list of the most urgent problems includes the absence of specifications, technical ignorance, strict legal regulations, poor monitoring, and increasing the risks of cybersecurity and consulting firm/supplier lock-in. These issues reflect

those discussed in the literature review and indicate the lack of an easy solution to deploy the traditional procurement strategies to the rapidly evolving IT context.

Simultaneously, there are encouraging prospects in the analysis. Respondents were very keen on the expansion of e-GP platform, investing in training and capacity building, and introducing new procurement, including framework agreements, and agile approaches. The knowledge of the advanced models is increasing, but there is a lack of practical application, which makes it obvious that there is a gap in that respect that can be bridged by changing the policy and through training. The general performance of IT procurement was moderate which indicates that the system is already functional, but it is not running to its full capacity. The results indicate that the key to success lies in the ability to balance between compliance and flexibility, enhance the organizational capacity, and take advantage of the emergent technologies so as to enhance transparency, efficiency, and value of money.

Chapter 5

Discussion

5.1 Introduction

This chapter has looked at the results that were shown in Chapter 4 in light of the goals and scope of the study. This study aimed to review the issues and prospects of IT procurement in Bangladesh, and the research study has concentrated on the impact of procurement processes, capacity, and governance on results. The discussion is a reflection on the results of the survey and interview, and how they have been related to the research objectives and the implications of the results to the procurement practice and policy.

5.2 Key Challenges Identified

5.2.1 Unclear Requirements and ToRs

It was found out that the most serious challenge was a unclear or poorly defined Terms of Reference (ToRs). As several respondents observed, specifications are usually drafted without sufficient technical specifications that results in discrepancy between what is obtained and what is required by the organization. This shows that requirement planning is still a liability in the field of IT procurement and usually compromises efficiency at an early stage.

5.2.2 Lack of Technical Capacity

The results of the surveys indicated that the procurement officials rated the capability of their organization to write ToRs, to evaluate technical offers, and to monitor IT contracts at the middle level. The weak in-house IT skills are a problem since you can hardly communicate with the consulting firm/supplier or evaluate the quality of the solutions offered. Such a knowledge lapse generates excessive dependence on suppliers and enhances the threat of consulting firm/supplier lock-in.

5.2.3 Rigid Rules and Procedures

The respondents also emphasized that the procurement laws and rules, although helpful in creating fairness and accountability would tend to be rigid and unresponsive to IT projects. The lowest price policy encourages the focus of quality, innovation, or longevity. This inflexibility renders it hard to adjust procurement practices to the fast-changing IT world.

5.2.4 Weak Monitoring and Accountability

One of the weakest areas was rated as post-award contract monitoring. There are no proper follow-ups on performance quality and standards, as reported by many respondents, once the contracts are awarded. Poor consulting firm/supplier sustainability also takes place due to weak monitoring which reduces accountability of consulting firms/suppliers.

5.2.5 Cybersecurity and Interoperability Risks

The other critical issue that was realized was the deficiency of strong focus toward cybersecurity and data governance in IT procurement. According to the respondents, clear clauses on the data protection or interoperability requirements are not provided in many contracts. This leaves the IT systems exposed to security attacks and hard to work with other platforms.

5.3 Comparison with Global Best Practices

The analysis of Bangladesh's situation against global literature and practices reveals clear gaps:

Theme	Bangladesh	Global Best Practices
Evaluation Method	Lowest Price dominant, QCBS	QCBS, Performance-Based
Specification Development	Generic, reused	Agile, iterative, stakeholder-based
Procurement Model	Fixed tender	Agile, Framework Agreements

Platform Capability	e-GP (generic)	Integrated digital platforms with analytics
Capacity Development	Limited training	Institutionalized cross-functional teams

Table 6: Comparison with Global Best Practices

Bangladesh has also already achieved some improvements in procurement reform, though the IT industry needs a more adaptive and responsive procurement ecosystem to prevent the policy-technical gap.

5.4 Opportunities Identified

5.4.1 Expanding the e-GP System

The opportunity to expand and strengthen the e-GP system was one of the strongest, as identified. The respondents believed that e-GP has already enhanced efficiency and transparency, but that its features need to be expanded to incorporate contract management, monitoring supplier performance, and connect with financial systems.

5.4.2 Capacity Building for Officials

The opportunities to be developed also stressed training and capacity building. A significant number of the respondents acknowledged that they did not have specialized knowledge of IT procurement in their organizations, but they were ready to be taught. The capacity gap can be closed with specific training in IT-related ToRs, contract governance, and risk management.

5.4.3 Advanced Procurement Model

The knowledge of progressive procurement methods including Framework Agreements and Agile Procurement was comparatively high with potential of adoption. Nonetheless, such models as Modular Procurement, Reverse Auctions, and BOT were not as familiar, and there was also an idea that in this regard, awareness-raising and piloting would open more chances to more flexible and creative solutions.

5.4.4 Leveraging Emerging Technologies

One more opportunity that was also mentioned by the respondents involves the implementation of new technologies like cloud-based solutions, data analytics, artificial intelligence solutions, and blockchain to enhance procurement efficiency and visibility. Although the adoption has not been high, the results indicate increasing interest among practitioners.

5.5 Link to Theoretical Framework

The results confirm the applicability of the Resource-Based View (RBV) and Stakeholder Theory to the dynamics of procurement:

- RBV demonstrates that the weaknesses in institution (e.g., IT-skilled procurement employees are absent) reduce procurement effectiveness.
- The Stakeholder Theory sheds more light on the fact that the absence of the end-user and IT-experts in the project scoping and evaluation compromises the quality of procurement.

5.6 Effectiveness of Current Procurement Process

The overall effectiveness of IT procurement was rated at an average of 7 out of 10 by respondents. This suggests that procurement is working moderately well but has considerable room for improvement. The highest ratings were linked to organizations using QCBS evaluation methods and the e-GP system, while the lowest ratings were associated with delays, weak monitoring, and unclear requirements. This mixed picture demonstrates that while progress has been made, systemic reforms are still needed.

5.7 Alignment with Research Objectives

The results of the study are in full correlation with the research goals:

- The study was able to recognize the major issues of ambiguous requirements, skill shortage, inflexible guidelines, and poor monitoring.
- It evaluated the sufficiency of procurement laws and systems where it is established that it promotes transparency yet inflexible to IT projects.
- It also assessed organizational capabilities, which affirmed the existence of great knowledge gaps in IT and contract management.
- It also investigated such opportunities as e-GP expansion, new models and training programs.
- It has also contrasted the opinions between participants in the public and private sector and has revealed that even though the public sector is challenged in its ability to adapt to strict procedures, the private consulting firms/suppliers are focused on innovation and flexibility.
- And, lastly, it also provided evidence of practical reforms, which will be presented in the recommendations of the following chapter.

5.8 Implications for Practice

The results indicate that Bangladesh is in a transition stage in regard to IT procurement. E-GP has already provided the system with some gains in transparency and efficiency, yet it is still limited by obsolete rules, lack of skills and ineffective monitoring. These concerns may make procurement not a production restraint, but a strategic facilitator of the digital transformation process. The identified opportunities, in particular, the capacity building, the adoption of advanced procurement models, and the stronger governance of the contract suggest a clear path of the development.

5.9 Conclusion

It is evident to this discussion that IT procurement in Bangladesh is not very good but limited by institutional and technical discrepancies. The results validate the fact that above-elaborated challenges are serious but there are possibilities to transform procurement into more flexible, efficient, and innovation-friendly system. It is on the basis of these insights that the conclusion and recommendations in Chapter 6 are made.

Chapter 6

Conclusion and Recommendation

6.1 Introduction

The chapter offers an overall conclusion of the outcomes of the study, including a conclusion of the major findings of the literature, fieldwork, and best practices of the rest of the world. Among the research findings, the confusion of specifications, lack of technical knowledge, inflexible legal systems, inadequate monitoring, and cybersecurity threats were found to be significant challenges, and the opportunities of e-procurement development, improved procurement processes, capacity building, and new technologies were also noted. On these findings, this chapter presents policy measures that can be taken by policy makers, procurement officers and any other party.

6.2 Conclusion

The paper concludes that IT procurement in Bangladesh is in a critical turnover. On the one hand, the system has recorded improvements with the reforms that include the Public Procurement Act (2006), Public Procurement Rules (2025) and also with the establishment of

the e-GP system. Conversely, the peculiarities of IT procurement such as its fast-evolving technologies and flexibility are not well supported by the existing laws, competencies and procedures.

The findings indicate that:

- The problems that negatively affect the procurement outcomes include poorly defined requirements, lack of expertise, and over-dependence on the lowest-price selection.
- Rigid rules are rule-oriented and restrict dialogue, innovativeness, and flexibility.
- After-award contract management and cybersecurity are poorly implemented, which is subject to lock-in of a consulting firm/supplier and vulnerability of the system.
- Simultaneously, there exist high prospects of transforming procurement with the development of digital systems, the development of organizational capability, and the adoption of adaptable procurement designs.

All in all, the IT procurement in Bangladesh is operational and average in its efficacy (average effectiveness score: 7/10). In order to exploit all its potential, reforms should be balanced in a way that would allow transparency and innovation.

6.3 Policy Recommendations

1. Expand and Strengthen e-GP

- Improve e-GP with contract management, performance dashboard and interoperability.
- Aggregate e-GP and financial management systems and project management systems to achieve end-to-end transparency.

2. Establish IT Procurement Guidelines

- Establish particular procedures regarding IT purchasing, including templates of ToR, criteria of evaluation, and cybersecurity provisions.
- Make interoperability and open standards requirements standardized to minimize consulting firm/supplier lock-in.

3. Promote Data Governance and Cybersecurity

- Require cybersecurity and data governance requirements on all IT contracts.
- Establish national data privacy, cloud, and consulting firm/supplier standards.

6.4 Practice-Oriented Recommendations

1. Procurement official capacity Building

- Conduct frequent training on writing IT specific ToRs, technical evaluation and contract management.
- Implement digital procurement and IT contract governance certification.

2. Promote Early Market Intervention

- Make pre-bid consultations with IT firms institutional to enhance requirement transparency.
- Establish collaborations with universities and IT associations to reach technical knowledge.

3. Empower Post-award Contract Management

- Design consulting firm/supplier performance monitoring systems in e-GP system.
- Monitor delivery, quality, and interoperability with the help of key performance indicators (KPIs).

4. Capitalize on New Technologies

- Pilot blockchain solutions for transparent records of contracts.
- Research on IoT-based monitoring in the procurement of IT hardware and infrastructure.

5. Bring in the participation of the Private Sector

- Offer incentives to the SMEs to engage in IT acquisitions.
- Use a framework agreement to enable the use of many consulting firms/suppliers to provide digital services.

6.5 Implications for Stakeholders

Stakeholder	Implication
Government agencies	The procurement reform should receive priority and budgetary allocation to institutional and human capacity building should be provided.
Procurement professionals	Needs to develop skills and adopt a lifecycle-based strategic approach.
Consulting firm/supplier	Active participation is required in the process of preparing specifications and guaranteeing performance outcomes.
Development partners	Financing of pilot programs in procurement reform can be extended along with technical assistance.

Table 7: Implications for Stakeholders

6.6 Limitations of the Study

- The research was also restricted to the selection of agencies and might not indicate all IT procurement scenarios.
- Project level financial/performance data were also constrained due to time and accessibility.
- The views of the private sector, although represented, might not be as diverse as the experiences are.

6.7 Recommendations for Future Research

- Comparison of IT procurement in the public and the private sector in Bangladesh.
- Lifecycle outcome longitudinal research of IT projects to quantify value-for-money.
- Competent investigations on information management, cyber-security, and artificial intelligence in the procurement systems.
- Case studies on agile and modular procurement model pilots in contexts of developing countries.

6.8 Closing Statement

The Information Technology (IT) industry procurement is no longer a matter of acquiring goods or services by a set of rules and procedures. It has now been a potent instrument that has been used directly to aid digital governance and other related objectives of national development. In the contemporary world where technology runs most of the operations of the government, IT procurement is one of the most important issues that define the effectiveness with which the government institutions provide services to the citizens.

Bangladesh has already done significant measures to enhance their procurement practice yet a lot of challenges persist. The existing systems tend to be more ruled by the rules rather than long-term value, innovation, and efficiency. Consequently, creativity and the uptake of technology is at times neglected as well as improved cost-effectiveness. Provided that Bangladesh is able to shift slowly off the compliance-oriented model towards value-oriented procurement, the pay-off will be enormous.

A value-based strategy implies not just being a rule-taker. It refers to the process of coming up with procurement decisions that not only encourage innovation but also cost effectiveness, and fair competition. It also has great focus on transparency and accountability which are key to the development of trust between the government, suppliers and citizens. Above all, it makes sure that procurement results are not only legally right, but also socially effective - they bring the actual changes in the life of people.

Bangladesh can also make IT procurement a real strategic enabler by implementing the right reforms, including the development of skilled human resource, enhancing digital procurement systems, encouraging public-private partnership, and international best practices. Not only will this enhance efficiency and decrease the chances of corruption, but this will also enable the government to provide smarter, faster, and more services friendly to the citizens.

In conclusion, IT procurement cannot be regarded as a routine administrative activity. It is a vital element of digital transformation and nation-building. Through implementing changes and being visionary, Bangladesh can release the potential of technology in governance and develop a procurement system which will bring about transparency, value and money and improved services to all citizens.

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Appendix A.

Survey Questionnaire

Title: Procurement in the IT Sector: Challenges and Opportunities

Purpose: This survey is part of an academic dissertation for the Master's in Procurement and Supply Management (MPSM) at BRAC University. Your responses will remain anonymous and confidential.

Section A: Respondent Profile

1. Name (Optional):
2. Designation:
3. Organization/Agency Name:
4. Years of Experience in Procurement:
☐ Less than 2 years ☐ 2–5 years ☐ 6–10 years ☐ Over 10 years
5. Sector:
☐ Public ☐ Private ☐ Development Partner ☐ IT Consulting Firm/Supplier

Section B: Organizational IT Procurement Experience

6. Does your organization procure IT-related goods/services?
☐ Yes ☐ No
7. Types of IT procurements most frequently conducted: (Choose One or More)
☐ Software Development ☐ IT Hardware ☐ Cloud Services
☐ Website/Portal Maintenance ☐ Networking/Infrastructure
☐ Cybersecurity Solutions ☐ Data Analytics/AI Solutions
☐ Other: _____

Section C: Procurement Process and Methods

8. Which procurement methods are most commonly used for the IT services procurement in your organization? (Choose One or More)
☐ Quality and Cost-Based Selection (QCBS)
☐ Fixed Budget Selection (FBS)
☐ Single Source Selection (SSS)

☐ Other: _____

9. Which procurement methods are most commonly used for the IT Goods procurement in your organization? (Choose One or More)

☐ Open Tendering Method (OTM)

☐ Limited Tendering

☐ Direct Procurement Method (DPM)

☐ Other: _____

10. Does your organization have a dedicated technical proposal evaluation committee for IT procurements?

☐ Yes

☐ No

☐ Occasionally

Section D: Capacity and System Readiness

11. Rate your organization's capacity in the following areas (1 = Very Low, 5 = Very High):

SL Area	1	2	3	4	5
1. Drafting IT-specific Terms of Reference (ToR)	☐	☐	☐	☐	☐
2. Technical proposal evaluation of IT bids	☐	☐	☐	☐	☐
3. Post-award monitoring of IT contracts	☐	☐	☐	☐	☐
4. Use of e-GP system for IT procurements	☐	☐	☐	☐	☐
5. Familiarity with agile/iterative procurement models	☐	☐	☐	☐	☐
6. Managing interoperability and system integration	☐	☐	☐	☐	☐
7. Applying cybersecurity and data protection measures in contracts	☐	☐	☐	☐	☐

Section E: Challenges in IT Procurement

12. To what extent do you face the following challenges, and how significantly do they impact IT procurement in your organization? (1 = Not at all, 5 = Very High)

SL Area	1	2	3	4	5
1. Poorly defined specifications/ToRs	☐	☐	☐	☐	☐
2. Lack of in-house IT expertise	☐	☐	☐	☐	☐
3. Rigid legal/procedural framework	☐	☐	☐	☐	☐

SL Area	1	2	3	4	5
4. Over-reliance on IT Firms	☐	☐	☐	☐	☐
5. Limited use of innovative procurement models	☐	☐	☐	☐	☐
6. Delays in approval/evaluation	☐	☐	☐	☐	☐
7. Monitoring and accountability issues	☐	☐	☐	☐	☐
8. Consulting firm lock-in and poor interoperability	☐	☐	☐	☐	☐
9. Cybersecurity and data governance risks	☐	☐	☐	☐	☐

Section F: Opportunities and Reform Insights

13. What opportunities do you see for improving IT procurement in your organization? (Choose One or More)

1. Implementing e-procurement solutions
2. Strengthening consulting firms/ supplier's relationships
3. Investing in procurement training
4. Adopting cloud-based solutions
5. Improving contract management
6. Focusing on cybersecurity in procurement
7. Enhancing data analytics for decision-making
8. Other (Please specify) _____

14. Are you familiar with any of the following advanced procurement approaches? (Choose One or More)

- ☐ Agile Procurement ☐ Framework Agreements ☐ Modular

Procurement

- ☐ Reverse Auctions ☐ Build-Operate-Transfer (BOT)
- ☐ Other: _____

Section G: Open Feedback

15. How would you rate the effectiveness of your current IT procurement processes? (1=Not Effective, 10= Highly effective)

1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

16. Any suggestions or examples of best practices you'd like to share?