

**Administrative Costs in Open Tendering Method in Public
Works Department: Improving Purchasing Performance**

**A Dissertation
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Executive Summary

The Public Works Department is responsible for the construction of infrastructure along with providing service to 24 ministries. It is one of eight executing organs in the Ministry of Housing and Public Works. It is also the Government's biggest construction agency.

This research paper focuses on the purchasing process of an original work in Public Works Department by open tendering method. Every year Public Works Department has to procure works which have significant administrative or process cost. The purchasing process is very inefficient, costly and time consuming in Public Works Department. The main objective of this paper is to identify the direct and indirect administrative cost of open tendering method in Public Works Department and to suggest ways how these costs can be reduced in order to improve the purchasing performance in Public Works Department.

The administrative cost or process cost of purchasing an original work in Public Works Department is approximately Five Lakh Taka which can be minimized if the organization can use e-tendering and can communicate internally through internet. In order to reduce the administrative cost and to improve the purchasing performance in Public Works Department, the following recommendations can be followed:

- i) The cost of collecting architectural drawing and structural drawing can be minimized by supplying the drawing through electronic media like internet, as a result not only the cost of conveyance can be reduced but also the time can be saved as well.

- ii) The department has to introduce the electronic media like email in order to improve the communication process and in this way significant time and cost can be minimized in the procurement process.
- iii) The cost of digital survey can be minimized by using central GPS (Global Positioning System).
- iv) If we can prepare a data base of the soil properties in different places in our country then we can save money as we do not need many bore holes while testing of soil.
- v) If the preparation of estimate can be done by technically sound person then the errors can be reduced and cost of repetitive printing can be minimized. In this way cost of stationery can be decreased.
- vi) In order to reduce the cost in preparation of estimate, estimating software can be used.
- vii) If a division can forecast the number of tender documents carefully then the division can prepare less number of tender documents and can save money.
- viii) Using e-tendering the organization can reduce paper work; as a result the bidder can get the tender document in the internet. In this way the organization can control their expenditure.
- ix) The amount of cost in invitation for tender can be eliminated by circulating the invitation for tender in the organization's own website and the website of CPTU.
- x) If the organization maintains the database of the bidders, then document verification cost of bidders can be minimized.

Chapter One

Introduction

1.1 Introduction:

Tendering is used in both the private and the public sectors in our country, but whereas in the private sector organizations can choose whether to use tendering as a method of supplier selection and contract formation, public sector bodies are subject to the Public Procurement Rules on public procurement and in certain circumstances they must use the tendering process to award contracts. In the public sector, organizations have no choice as the law requires them to use the tendering process. But in the private sector, organizations can choose whether to use a tendering process to seek interested suppliers and award contracts in order to obtain the goods and services they require. However, the use of tendering process is not always the most appropriate method of obtaining requirements as the value of the purchase must justify the tendering expense of time and effort. There must be sufficient time for tendering to be used.

In the tendering process the purchaser issues an invitation to tender either in an advertisement or directly to selected vendors in which potential suppliers are invited to make an offer to supply goods or services. In the invitation to tender the purchaser lists details of their requirements, which usually include an appropriate specification, a statement of the terms and conditions which will form the basis of any contract which is made, and the date by which the supplier's bid should returned to the purchaser. In the whole tendering process, there is significant administrative cost, like cost of advertisement in the newspaper, cost of preparing the tender documents and so

on. This study tends to find out those process costs of tendering and how these costs can be reduced.

1.2 Objective:

The objectives of this research paper are:

1. To find out the direct and indirect cost of purchasing process in Public Works Department.
2. To know the unnecessary steps those actually do not add value but incur cost.
3. To suggest how to reduce the cost or how to improve the purchasing performance of Public Works Department.

1.3 Research Question:

The research question is what is the administrative cost of tendering process in Public Works Department and how the process costs or the administrative costs of tendering in Public Works Department can be reduced?

1.4 Scope of this paper:

This study will cover the tendering process of Public Works Department (PWD). PWD is one of the eight executing organs in the Ministry of Housing and Public Works. It is also the biggest construction agency of Government. Besides, it also undertakes projects for autonomous bodies. Once the work is given to PWD, the client is relieved of such responsibilities as getting the plans approved, acquiring land for Government projects, evaluating bids, appointing contractors, setting material

standards, resolving disputes with contractors, arbitration and going to court. In short, the whole project becomes the responsibility of the department.

One of major areas of PWD's involvement in Government construction works is regular repair and maintenance works of Government buildings. The expenditure involved in this sector amounts to around 280 to 300 crore taka yearly.

Most of the procurement of PWD is done by the method of competitive tendering procedure. Besides, there are other methods of purchasing which are followed according to rules of PPR. This study covers competitive tendering process of PWD to reduce the administrative cost of tendering process of PWD.

1.5 Methodology:

Both primary and secondary data has been collected from the required sources. Primary data has been collected through questionnaire, and key informant interviews. The personal interview has been conducted with the executives who are executing tendering process and signing the contract with the approved tenderer. For the collection of primary data, a questionnaire has been prepared. A combination of open end and close end questions have been set in the questionnaire to acquire the necessary information required for the study. After getting the feedback from the necessary respondent, the data has been edited, arranged, and analyzed. Moreover six case studies have been used to prepare this thesis. At first, different steps of procurement in Public Works Department have been developed. Then the questionnaire has been arranged to find out the cost of each step in procurement in Public Works Department. Questions have also been arranged to know how to reduce

the cost of each step and how to improve the purchasing performance of Public Works Department. The researcher has also got information from key informant interviews. The questionnaire has been attached in Annexure-A.

1.6 Limitations:

Public Works Department has divisions in all the districts town of Bangladesh. Purchasing is done through all of them and most of the purchasing is done through competitive bidding process. Due to time constraints, not all of them could be covered in data collection process. This study covers the data collection from twenty five respondents who are working in different divisions and sub-divisions in Public Works Department and offers only a snapshot look.

1.7 Overview of the Study:

Chapter One: Introduction: This chapter focuses on the objectives of the research paper. The main objective of this paper is to find out the administrative cost of purchasing process in Public Works Department and to suggest ways to improve the purchasing performance in terms of cost and time. This chapter also contains the scope, methodology and limitations of this thesis paper.

Chapter Two: The Context: The scope of this paper has covered the purchasing process of Public Works Department. This chapter deals with the history of Public Works Department, the manpower of PWD and how PWD does the purchasing of an original work. Public Works Department is one of the eight executing organs in the Ministry of Housing and Public Works. It is also the biggest construction agency of Government. Most of the procurement of PWD is done by the method of competitive

tendering procedure. Besides, there are other methods of purchasing which are followed according to rules of PPR.

Chapter Three: Literature Review: The literature of this thesis paper has been taken from Official CIPS Course Book of Developing Contracts in Purchasing and Supply. Tendering process and principles have been discussed in this chapter. Dobler and Burt (1969), two well-known American writers on purchasing, have identified five conditions for successful competitive tendering. They are, the value of the purchase must justify the tendering expense of time and effort, specifications must be clear to all parties, there must be an adequate number of sellers, the sellers must be technically competent and there must be sufficient time for tendering to be used. There are two major types of tendering process: Open procedure and restricted or selective tendering. This chapter also discusses the different stages in the tendering process. There are ten stages in the tendering process. Legal principles of tendering, supplier pre-qualification, tender evaluation and awarding the contract have also been discussed in the chapter of literature review.

Chapter Four: Findings and Analysis: Based on literature review, the researcher has tried to find out the different stages of procurement of an original work in Public Works Department. At first, the executing division has to prepare the digital survey of the location, and then the architect prepares the architectural drawing based on the digital survey and the requirements of the approving authority. The design division of Public Works Department prepares the structural drawing based on soil test and architectural drawing. After getting the architectural drawing and structural drawing the executing division prepares the detail estimate of the work. Then the division prepares the tender document and invites the tender. After receiving all the tenders, tender evaluation committee evaluates the tender and finally awards the contract. The

researcher has prepared the questionnaire to find out the process cost of each stage. The questionnaire also contains the questions regarding the possible reduction of process cost of each step. Data of twenty five respondents have been collected. Among them six case studies have been analyzed to find out the administrative cost of those six projects.

Chapter Five: Conclusion and Recommendations: This is the final chapter of this thesis paper. This chapter contains the table shows the administrative cost, total cost and the administrative cost as a percentage of total cost of six different projects. In order to reduce the administrative cost of purchasing in PWD a number of recommendations have been given in this chapter. These recommendations have been written based on key informant interviews and filled up questionnaire from the respondents. Some of the important recommendations are as follows:

- i) The internal divisions have to introduce the electronic media like email in order to improve the communication process and in this way significant time and cost can be minimized in the procurement process.
- ii) Preparation of estimate can be done by technically sound person so that errors can be reduced and cost of repetitive printing can be minimized.
- iii) Collection of architectural and structural drawing can be done by using email in lieu of manually so that significant direct and indirect cost regarding the collection of architectural drawing can be decreased.
- iv) By using estimating software, cost of preparation of estimate can be reduced as it will take less paper work and more error free.
- v) Using e-tendering, the organization can reduce paper work; as a result the bidder can get the tender document in the internet and thus the organization can control the expenditure.

Chapter Two

The Context

2.1 Brief History of PWD:

During the period of the British rule in this subcontinent, in 1786 a Military Board was set up to look after all public work matters at that time. Later on the Government decided to establish the Public Works Department in the year 1854. At that time PWD was responsible for the construction of roads, buildings, railways as well as flood control, irrigation and military works. With the partitioning of India and Pakistan in 1947, the responsibility of construction work for the Central Government of Pakistan was vested in the Central PWD. The Communication and Building Directorate (C&B), which existed at the time, was entrusted with all construction work for the Provincial Government of the then East Pakistan.

After the liberation of Bangladesh in 1971, the country inherited two separate organizations for the construction and maintenance of Government Buildings: the Central PWD and the Buildings Directorate of the Provincial Government. These two entities were merged into one department in 1977 to form the present Public Works Department.

The infrastructural growth of Bangladesh includes the development of urban and growth centers, housing, railways, highways, roads and road structures, ports and

harbors, airports, drainage and navigational canals, gas pipelines, water supply and sanitation facilities.

Beginning its journey in 1854 with the responsibility of forging an architectural framework for the sub-continent, the PWD has experience dating back two centuries. The organization's construction work is directly connected to the national program of development and reconstruction.

The Public Works Department is responsible for the construction of infrastructure along with providing service to 24 ministries. It is one of eight executing organs in the Ministry of Housing and Public Works. It is also the Government's biggest construction agency.

The various works programs of the Public Works Department and its span of work are not confined to the urban areas only. They reach into distant district headquarters, remote villages, near borderlands and even the largely inaccessible parts of the country. The result is that where life was once dull and monotonous it has now been boosted by unprecedented progress in the implementation of a diversity of projects. In many instances, communication was not as convenient as it is nowadays. Still, with the aid of thousands of working hands, the Department has left no stone unturned in giving a more than satisfactory service to the nation. Being an entity within a developing country, the Department has been performing its task with a high degree of innovation, minimal expense and maximum workmanship.

The PWD has countless examples illustrating this work ethic. Its dedicated staff has

contributed in no small measure in shaping what the PWD is today. The workers are to be considered both as partners and performers. (www.pwd.gov.bd)

2.2 Manpower of PWD:

The PWD is headed by a Chief Engineer, supported by 10 Additional Chief Engineers (Civil), 1 Additional Chief Engineer (Elec./Mech.), 36 Superintending Engineers, 139 Executive Engineers, 280 Sub-Divisional Engineers, 189 Assistant Engineers, 1167 Sub-Assistant Engineers and staff spread all over the country. Field offices are divided into Civil Working Units and Electrical/Mechanical (E/M) Working units. In the Field there are six Zonal Additional Chief Engineers in six Zonal (Divisional) Head quarters under which there are Superintending Engineers, Executive Engineers, Sub-Divisional Engineers, Assistant Engineers, Sub-Assistant Engineers both for Civil and E/M works. The Ministry of Housing and Public Works exercises the administrative control of the PWD.

The Chief Engineer is the administrative and technical Head of the department. He also acts as the Technical Advisor to the Government of Bangladesh. The next in command are eleven Additional Chief Engineers. Each Additional Chief Engineer has a separate hierarchical setup of Superintending Engineers, Executive Engineers, Sub-Divisional Engineers and Assistant Engineers.

The operational units in the PWD are spread throughout the country. To facilitate better client/users satisfaction and adequate technical, administrative and supervisory control in the execution of projects, field organizations are comprised of Zones, Circles, Divisions and Sub-Divisions. (www.pwd.gov.bd)

2.3 Teamwork and User Satisfaction in PWD:

The Public works Department has highly qualified and experienced professionals forming a multi-disciplinary team of civil, electrical and mechanical engineers who work alongside architects from the Department of Architecture. As a sister organization falling under the administrative control of the Ministry of Housing & Public Works, the latter works well with the PWD in providing service to the nation. With its strong base of standards and professionalism developed over the years, the PWD is the repository of expertise and hence the first choices among discerning clients for any type of construction project in Bangladesh. It is recognized as a leader and pacesetter in the construction industry because of its consistently superior performance.

For the PWD, functional and aesthetic quality, application of appropriate technology and local materials, cost effectiveness and user satisfaction get paramount importance. A vigorous program of quality assurance, quality control and technical audit feeds into the range of the activities of PWD. The Department aims at Total Quality Management through a system of modernization and human resource development.

Over the years, the PWD has gained invaluable experience in a wide range of fields. It has an excellent track record for quality, cost effectiveness and speed. Well-documented standards, specifications, schedule of rates, design practices, costing systems, the application of procedures which ensure proper utilization of public funds and total accountability are all embodiments of the department. (www.pwd.gov.bd)

Chapter Three

Literature Review

3.1 Tendering-process and principles:

Tendering is used in both the private and the public sectors in Bangladesh, but whereas in the private sector organizations can choose whether to use tendering as a method of supplier selection and contract formation, public sector bodies are subject to the Public Procurement Rules on public procurement and in certain circumstances they must use the tendering process to award contracts. These Public Procurement Rules are legal rules, which only apply to public sector bodies in Bangladesh. They specify rules which stipulate how bodies in the public sector should go about awarding high-value contracts for the supply of goods and services.

In the public sector, therefore, in some circumstances organizations have no choice as the law requires them to use the tendering process. Otherwise, and certainly in the private sector, organizations can choose whether to use a tendering process to seek interested suppliers and award contracts in order to obtain the goods and services they require. However, the use of the tendering process is not always the most appropriate method of obtaining requirements and so the purchasing professional must recognize when tendering should and should not be used. Dobler and Burt (1969), two well-known American writers on purchasing, have identified five conditions for successful competitive tendering:

- The value of the purchase must justify the tendering expense of time and effort.

- Specifications must be clear to all parties, and suppliers must know their costs of production.
- There must be an adequate number of sellers.
- The sellers must be technically competent and must actually want the contract.
- There must be sufficient time for tendering to be used.

Additional conditions to consider are:

- The purchaser has a good idea of the price as otherwise they could be exploited by suppliers. It could be difficult for the purchaser to have an idea of the price, for example in the case of first time purchase of computer software, a building extension or even a contract for the construction of an overseas facility. In these circumstances the lowest bid might still be inflated and the purchaser would not realize this.
- The purchaser has a good reputation for actually awarding contracts. Some purchasers have no intention of awarding the contract and instead they use tendering process merely as a way to test the market. Suppliers are likely to quote high prices and put minimal effort into their bids in such circumstances or even not to put in a bid.
- The buyer's procedures are trusted by suppliers: if suppliers do not trust the system and suspect that certain suppliers will receive favorable treatment, they may refuse to tender or put little effort into their bids. (CIPS 2009, pp190-91)

3.2 Types of tendering:

There are two major types of tendering process:

- Open procedure. Here, any supplier is allowed to submit a bid for a contract. A disadvantage with completely open tendering is that a lot of work is then subsequently required to identify which of the suppliers will actually be able to carry out the work.
- Limited or selective tendering. Here, only those suppliers who are considered capable of carrying out the work are invited to tender. These suppliers may have been pre-qualified through an earlier supplier appraisal exercise. (CIPS 2009, p191)

3.3 The Tendering process:

In the tendering process the purchaser issues an invitation to tender either in an advertisement or directly to selected vendors in which potential suppliers are invited to make an offer to supply goods or services. In the invitation to tender the purchaser lists details of their requirements, which usually include an appropriate specification, a statement of the terms and conditions which will form the basis of any contract which is made, and the date by which the supplier's bid should be returned to the purchaser.

The supplier includes in their bid all of the relevant details of prices, specifications or deliveries in response to the purchaser's requirements and once the bid is submitted in accordance with the invitation to tender the supplier becomes the tenderer. The bid or

tender submitted is an offer open to acceptance within a certain time period. (CIPS 2009, p191)

3.4 Stages in the tendering process:

Generally, organizations broadly follow the stages outlined here when they are using the tendering process.

The purchasing function liaises with other departments according to the nature of the goods or services sought to prepare the tender documents, which can vary in relation to detail, structure and length from one organization to another. The purpose of the tender documents is to obtain information from potential suppliers to enable an informed decision to be made as to which bid best meets the purchasing organization's need for that tender. Tender documents usually include:

- The specification of the materials, services or equipment required
- The nature of the relationship expected with the supplier
- The proposed terms and conditions of the contract
- The criteria upon which the winning bidder(s) suppliers will be selected
- Details of deadlines, timescales, contact points and procedures, for example post-tender negotiation
- Space to allow the supplier to propose amendments to terms and conditions.

The tender is advertised and expressions of interest are requested from the supply market, so that tender documents may be sent out to interested parties.

The tender documents are sent out to the parties who have expressed an interest in open tendering and those suppliers on pre-qualified list in limited tendering. In their

bids the parties must follow the precise terms requested in the tender document as otherwise they will be rejected. No variation in terms should be given to any one tenderer unless they are given to all.

Tenderers may request further information or clarification, but if so it should be provided to all so as to ensure fair competition.

Tenderers must send in all tender documents/bids so that they arrive by the closing date in the required format.

When the closing date and time has been reached only the bids submitted in time will be considered to ensure fairness to all suppliers and to reduce the possibility of supplier collusion or sharp practice. They are opened at the specified date and time, before a panel of independent employees normally from outside the purchasing department, and the details of each bid are recorded and a bidding profile is produced.

The tenders are analyzed with reference to the stated requirements and a recommendation is made as to which, if any, is the most attractive. If there is evidence of collusion or if the buyer is not satisfied with any bid has clearly stated at the outset that they are not obliged to accept any tender, all the bids can be rejected. The analysis may then be passed to a tender board to formally decide which the best tender is. The contract is often awarded to the supplier who has offered the lowest price or is economically most advantageous.

Once the decision is made, the purchasing department usually leads negotiations to clarify or improve the offer with the successful supplier.

The purchasing department may be required to write and file a report for future reference.

If the tenders received back are considered to be good value for money, then there is the possibility of re-tendering the contract by re-advertising the requirements and repeating the tendering process. (CIPS 2009, p192)

3.5 Legal principles of tendering:

The invitation to treat when tendering is used is the buyer's invitation to potential suppliers to submit tenders. This is true whether the process is one of open tendering or limited tendering. In the invitation to tender the buyer will specify what the requirement is and can include in whatever contractual terms it wishes the contract to be based upon; in other words, the buyer can specify that the contract be formed on its standard terms and conditions.

The bid or tender received from the supplier in response to an advertised requirement can be interpreted as an offer which is open for acceptance for a specific period or until it is withdrawn. The supplier is aware that to have any chance of success it should ensure its tender meets the requirements of the invitation, and if accepted the supplier will usually be contracting on the purchaser's standard terms and conditions.

In addition to the legal principles applicable to contract formation under the tendering process, there are other legal principles to consider. There is a contractual obligation

to consider all compliant tenders received by the deadline. Unless explicitly stated otherwise, there is no obligation to accept the lowest bid.

Notwithstanding the above, as always, what is acceptable legally may not be seen as fair or appropriate commercially. Tenders take a lot of time and effort to prepare and cost, and suppliers take a dim view of buyers who tender for contracts and never award, or who do not keep to agreed timescales. Abusing the tendering process for opportunistic advantage is likely to make the buyer an unattractive customer to the supply market in the longer term. (CIPS 2009, p193)

3.6 Supplier pre-qualification:

Supplier appraisal is an important part of the purchasing professional's task. In relation to tendering, suppliers can be appraised prior to the tendering process where the purchaser wishes to restrict supplier entry into the process. By using pre-selection the purchasing professional is able to assess whether possible suppliers will be suitable, whether they are consistently able to supply the right goods or services (in accordance with the specification) which are the right quality, delivered to the right place at the right time and for the right price.

As pre-qualification of suppliers can be a costly exercise it would not be undertaken in all situations. By considering the factors of risk and spend the various requirements an organization seeks can be analyzed to decide how important it is to pre-qualify suppliers or that requirement. Pre-qualification is not usually necessary for low-

risk/low-spend items, it can be useful for low-risk/high-spend items, it is important for low-spend/high-risk items and it is essential for high-risk/high-spend items.

Once it has been decided to carry out pre-qualification, the various criteria which will be used to assess whether suppliers might be suitable should be listed. The criteria used may vary from one pre-qualification to another depending on what attributes the purchasing organization is looking for in prospective suppliers for this particular requirement, but generally technical/quality, financial, commercial and environmental criteria such as the following queries may be relevant for high-risk/high-spend requirements:

Financial: Is the organization financially stable?

Technical: Does the organization have the technical capability to supply the requirement?

Quality: Does the organization have the capability to supply the requirement of the right quality? Does it have third-party certification for quality such as ISO 9000:2000?

Capacity: Does the organization have the available capacity to supply the requirement and can it respond to urgent demands for it when necessary?

Delivery: Is the organization able to deliver to the right place at the right time?

Customer Satisfaction: Are the organization's current customers satisfied with them?

Do they have good customer references?

Culture: What is the organization's culture and is it compatible with your own?

Management: Is the organization well managed?

Health and safety: Does the organization have a good health and safety record?

Industrial relations: Does the organization have a good record for industrial relations, that is, has it had strikes or other industrial action by its workforce?

Research: What are the organization's research facilities?

IT: What is the organization's IT capability?

E-procurement: Is the organization capable of trading electronically?

Environment: What is the organization's position on environmental issues? Does it have or is it working towards achieving ISO 14000, the certification for environmental management?

Fair trade: What is the organization's position on fair trade issues?

Once a supplier is pre-qualified it can be placed upon the approved supplier list (ASL). If an organization wishes to use tendering to source a requirement or even just to test the market, it may decide to invite suppliers on the ASL to submit tenders and thus the process would be one of limited tendering. If the invitation to tender was addressed to world at large, any supplier could submit a tender and so it would be an open tendering process. (CIPS 2009, pp194-95)

3.7 Tender evaluation:

Once the suppliers submit tenders in accordance with the specified procedures they must be analyzed. During the analysis the purchasing organization will consider the tenders in relation to its evaluation criteria for that particular requirement. The risk and spend factors can be used to help analyze which criteria should be used for different categories of requirements.

High risk/high spend items: Requirements in this category are very important to the purchasing organization with the emphasis on value. Evaluation criteria are likely to reflect the whole-life cost approach. The components of value, for example quality, must be given a particular weighting and then scored. When this is done, the whole-life cost is divided by the total weighted score; this then gives the monetary value per point scored for each bid. This value for each bid is then compared to find the lowest which is the one that gives the best value.

High spend/low risk items: A similar process can be used as for high risk/high spend, but as there is little risk with aggressive tendering requirements in this category it can be regarded as a source of profit for the purchasing organization. Consequently value here usually means lowest price or lowest total life cost so other value components are often not important and so they are sometimes disregarded when bids are analyzed.

High risk/low spend items: In purchasing requirements which fall into this category the most important thing for the purchasing professional is to protect their organization by making security of supply a high priority. A high-threshold score can be allocated to security of supply any supplier unable to meet it will not be considered. The more important security of supply is the more important this factor becomes. In some situations it may even be the only criterion to consider with some requirements.

Low spend/low risk items: With requirements falling into this category, price is usually the main criterion, although delivery, quality or other factors may be considered. Due to the cost involved in carrying out pre-qualification, however, the

evaluation process is unlikely to be as thorough as in the previous categories. (CIPS 2009, pp196-97)

3.8 Awarding the contract:

Once the individual in the purchasing organization who has the authority to approve the award of the contract to a particular supplier has given that approval, the contract can be awarded or 'let'. The way that the award of contract occurs depends upon how the tendering process has taken place.

Where the original tender was not amended after negotiation, it can be accepted by the purchasing organization sending a letter to the successful supplier.

Where the original bid has been amended or where amendment has occurred after Post Tender Negotiation, a contract is usually drafted (based on the notes of the negotiation meeting which were circulated and agreed) and send to the successful tenderer for them to confirm it does set out exactly what was agreed. Two dated and signed copies of the contract are sent to the successful tenderer for their signature. One copy is then returned to the purchasers. Otherwise, if preferred the parties can meet and the documents are then dated and signed.

Once the contract has been signed, the unsuccessful tenderers should be informed that their tenders were not accepted, with information as to why the bid was unsuccessful. This information should be prepared after consultation with relevant departments in the purchasing organization such as finance and legal, and approval of the information

to be released should be sought from the head of procurement or some other suitable person in the purchasing organization. It is also usual that the information be given in a telephone conversation or a meeting with the unsuccessful tenderer and that a note be retained of any comments from them together with any further responses made by the purchasing professionals involved. (CIPS 2009, p198)

Chapter Four

Findings and Analysis

4.1 Findings:

The objective of this research paper is to assess the administrative cost or process cost of Open Tendering Method and to find out the ways how to improve the purchasing performance by reducing the unnecessary cost. In order to fulfill the requirement of the objective the researcher has developed a questionnaire which has been attached in the appendix. The researcher asked different personnel (sample size of 25) of Public Works Department to fill up the questionnaire of this study. The questionnaire consists of around twenty questions. Some of the questions are open ended and some of them are close ended questions. The researcher got the response from twenty five persons who have filled up the questionnaire and have given their sincere input in order to prepare the research paper.

The questions were arranged according to the steps in procurement of works in Public Works Department. In any original work in Public Works Department, the work starts from the digital survey of the location where the construction work is done. The researcher has tried to find the cost of the digital survey of the work by asking questions to the respondent who is involved to arrange the digital survey of that work. In order to start the work the corresponding division has to collect the architectural drawing from the architectural department. As the collection process is manual so there is considerable cost in this process. Sometimes the required person of the executing division has to come to the Architectural Department number of times to get the architectural drawing. The researcher has tried to find out the cost regarding

the collection of architectural drawing. In this case the cost can be the conveyance cost, printing cost and so on. In every construction work, there is a cost of soil test. The researcher has tried to identify the soil test cost by getting the cost of one bore hole and the required total number of boreholes. Then the researcher has asked the next question about the cost to collect the structural drawing from the design division of Public Works Department.

The researcher has got idea about the cost of preparing an estimate by asking questions like what is the cost of preparing an estimate (such as stationery, printing cost and others). In order to prepare the tender documents the corresponding division needs considerable money and time. The division has to prepare a large number of tender documents so that tender documents are available for the suppliers who are interested to bid in the tendering process. There is another cost in the tendering process which is invitation for tender. In open tendering method, invitation for tender has to be advertised in the two national daily newspapers and one local daily newspaper according to the Public Procurement Rules 2008. It takes significant money to advertise in the national daily newspapers. The researcher has tried to find out the cost of invitation for tender. When the tenders are received then comes to the stage of opening of tender. In opening of tender there is cost of stationery, refreshment, honorarium given to the member of the tender opening committee. There is also cost of refreshment to the security personnel who are doing their duty in order to maintain the situation under control. The researcher has also tried to find out the cost for evaluation of tender and cost of verifying the documents of the bidders.

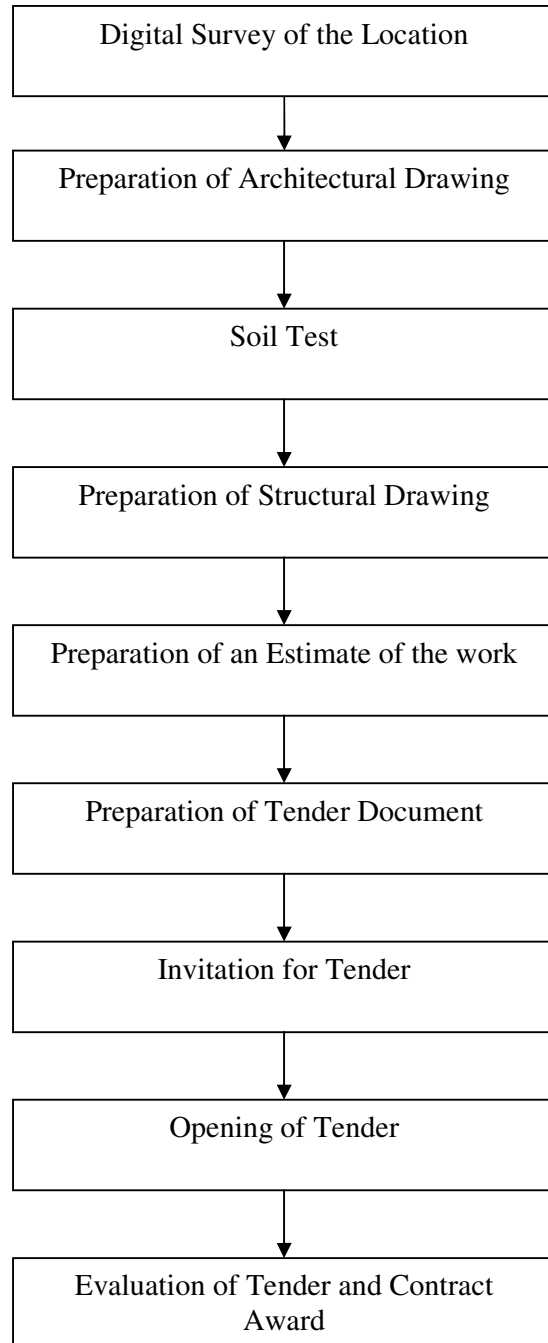


Fig 1: The flowchart of the different stages of procurement of an original work in PWD.

4.2 Analysis:

From the response of the questionnaire the researcher has tried to identify the direct and indirect cost of each step in open tendering method. This paper also focuses on what is the total administrative cost of open tendering method in Public Works Department and what actually the percentage of process/administrative cost compare to the total cost of the work. We will discuss six different projects of PWD. The following table shows the administrative or process cost of the Construction of Academic Building of Khulna Medical College.

**Table 1: Construction of Academic Building at Khulna Medical College.
Total Cost of the Project: TK 12,00,00,000 (Twelve Crore TK)**

Different Stages of Procurement of a Work	TK
Cost of digital survey	30000
Cost to collect architectural drawing from architectural department	15000
Soil test cost	200000
Cost of collecting structural drawing from design division	15000
Cost of preparing an estimate	15000
Cost of preparing tender documents	200000
Cost of Invitation for Tender	50000
Cost in opening of tender	5000
Cost of evaluation of tender	5000
Cost of verifying documents	3000
Total administrative/process cost	538000

Administrative/Process cost as a % of Project cost is 0.45

The table below shows the administrative or process cost of the project “12 Model Thana Administrative cum Barrack Building Project one at Munshiganj”.

Table 2: 12 Model Thana Administrative cum Barrack Building Project one at Munshiganj.
Total Cost of the Project: TK 1,89,00,000 (One Crore Eighty Nine lakh TK)

Different Stages of Procurement of a Work	TK
Cost of digital survey	60000
Cost to collect architectural drawing from architectural department	10000
Soil test cost	150000
Cost of collecting structural drawing from design division	10000
Cost of preparing an estimate	20000
Cost of preparing tender documents	150000
Cost of Invitation for Tender	80000
Cost in opening of tender	5000
Cost of evaluation of tender	10000
Cost of verifying documents	5000
Total administrative/process cost	500000

Administrative/Process cost as a % of Project cost is 2.65

From the table we can see the total administrative cost of the project is five lakh taka which is 2.65% of the total value of the project.

The table below shows the administrative or process cost of the project “Construction of Ten Barrack Building one at Rangamati”.

**Table 3: Construction of Ten Barrack Building one at Rangamati.
Total Cost of the Project: TK 9,00,00,000 (Nine Crore TK)**

Different Stages of Procurement of a Work	TK
Cost of digital survey	80000
Cost to collect architectural drawing from architectural department	20000
Soil test cost	60000
Cost of collecting structural drawing from design division	10000
Cost of preparing an estimate	5000
Cost of preparing tender documents	120000
Cost of Invitation for Tender	55000
Cost in opening of tender	10000
Cost of evaluation of tender	15000
Cost of verifying documents	10000
Total administrative/process cost	385000

Administrative/Process cost as a % of Project cost is 0.43

From the table we can see the total administrative cost of the project is three lakh eighty five thousand taka which is 0.43% of the total value of the project.

The following table shows the administrative or process cost of the project “Construction of Auditorium at NIMCO”.

**Table 4: Construction of Auditorium at NIMCO.
Total Cost of the Project: TK 4,80,00,000 (Four Crore Eighty Lakh TK)**

Different Stages of Procurement of a Work	TK
Cost of digital survey	30000
Cost to collect architectural drawing from architectural department	10000
Soil test cost	60000
Cost of collecting structural drawing from design division	10000
Cost of preparing an estimate	10000
Cost of preparing tender documents	100000
Cost of Invitation for Tender	50000
Cost in opening of tender	5000
Cost of evaluation of tender	10000
Cost of verifying documents	5000
Total administrative/process cost	290000

Administrative/Process cost as a % of Project cost is 0.60

From the table we can see the total administrative cost of the project is two lakh ninety thousand taka which is 0.60% of the total value of the project.

The following table shows the administrative or process cost of the project “Construction of Technical Training Center”.

**Table 5: Technical Training Center.
Total Cost of the Project: TK 8,00,00,000 (Eight Crore TK)**

Different Stages of Procurement of a Work	TK
Cost of digital survey	30000
Cost to collect architectural drawing from architectural department	10000
Soil test cost	60000
Cost of collecting structural drawing from design division	10000
Cost of preparing an estimate	10000
Cost of preparing tender documents	50000
Cost of Invitation for Tender	50000
Cost in opening of tender	5000
Cost of evaluation of tender	10000
Cost of verifying documents	5000
Total administrative/process cost	240000

Administrative/Process cost as a % of Project cost is 0.30

From the table we can see the total administrative cost of the project is two lakh forty thousand taka which is 0.30% of the total value of the project.

The table below shows the administrative or process cost of the project “Construction of 7 RAB Complex one at Adamji for RAB 11 under Narayanganj District”.

**Table 6: Construction of 7 RAB Complex one at Adamji for RAB 11 under Narayanganj District.
Total Cost of the Project: TK 60,00,00,000 (Sixty Crore TK)**

Different Stages of Procurement of a Work	TK
Cost of digital survey	60000
Cost to collect architectural drawing from architectural department	15000
Soil test cost	500000
Cost of collecting structural drawing from design division	15000
Cost of preparing an estimate	20000
Cost of preparing tender documents	200000
Cost of Invitation for Tender	50000
Cost in opening of tender	8000
Cost of evaluation of tender	10000
Cost of verifying documents	5000
Total administrative/process cost	883000

Administrative/Process cost as a % of Project cost is 0.15

From the table we can see the total administrative cost of the project is eight lakh eighty three thousand taka which is 0.15% of the total value of the project.

Thus at a glance, following table shows the administrative cost and total cost of six different projects of Public Works Department

Table 7: A Comparative picture of the six different projects

SI No	Name of the Project	Total Cost (TK)	Administrative Cost (TK)	Administrative Cost as a % of Total Cost
1	Construction of Academic Building at Khulna Medical College.	12,00,00,000 (Twelve Crore TK)	5,38,000 (Five Lakh Thirty Eight Thousand Taka)	0.45%
2	12 Model Thana Administrative cum Barrack Building Project one at Munshiganj.	1,89,00,000 (One Crore Eighty Nine lakh TK)	5,00,000 (Five Lakh Taka)	2.65%
3	Construction of ten Barrack Building one at Rangamati.	9,00,00,000 (Nine Crore TK)	3,85,000 (Three Lakh Eighty Five Thousand Taka)	0.43%
4	Construction of Auditorium at NIMCO.	4,80,00,000 (Four Crore Eighty Lakh TK)	2,90,000 (Two Lakh Ninety Thousand Taka)	0.60%
5	Technical Training Center.	8,00,00,000 (Eight Crore TK)	2,40,000 (Two Lakh Forty Thousand Taka)	0.30%
6	Construction of 7 RAB Complex one at Adamji for RAB 11 under Narayanganj District.	60,00,00,000 (Sixty Crore TK)	8,83,000 (Eight Lakh Eighty Three Thousand Taka)	0.15%

From the analyzing of above mentioned six cases, it is clear that there is significant administrative cost in Open Tendering Method in Public Works Department. Administrative cost varies in different projects based on the volume of work. Here, we can see that minimum administrative cost is Taka two lakh forty thousand in Technical Training Centre Project. The maximum administrative cost is Taka Eight lakh eighty three thousand in Construction of 7 RAB Complex Project. Among the different steps in Open Tendering Method, cost of soil test and tender document preparation cost is very high compare to other stages of procurement. There are some steps which do not add value in the procurement process; rather these steps incur additional cost. Such as, collection of architectural and structural drawing from corresponding division is done manually which incurs unnecessary cost and time to the procurement process. This cost can be minimized through using electronic media like internet.

Chapter Five

Conclusion and Recommendations

5.1 Conclusion:

This research paper focuses on the purchasing process of an original work in Public Works Department by open tendering method. Every year Public Works Department has to procure works which have significant administrative or process cost. The purchasing process is very inefficient, costly and time consuming in Public Works Department. The main objective of this paper is to identify the direct and indirect administrative cost of open tendering method in Public Works Department and to suggest ways how these costs can be reduced in order to improve the purchasing performance in Public Works Department.

The researcher has prepared a questionnaire regarding the administrative cost in different stages of open tendering method. From the feedback of the respondents who are working in different division, sub-divisions in Public Works Department, the researcher has summarized the total administrative cost of procurement of six different projects. The researcher also identifies the percentage of administrative or process cost compare to the total cost of the project or work. From the research it is seen that the administrative or process cost is around five lakh taka. The percentage of administrative cost as a total cost of the project is like 0.5 to 2 %. This significant administrative cost should be minimized in order to improve the purchasing performance of Public Works Department.

5.2 Recommendations:

From the above discussion it is seen that there is significant amount of administrative cost in purchasing process in open tendering method in Public Works Department. The administrative cost or process cost of purchasing an original work in Public Works Department is approximately Five Lakh Taka which can be minimized if the organization can use e-tendering and can communicate internally through internet. In order to reduce the administrative cost and to improve the purchasing performance in Public Works Department, the following recommendations are given by the respondents:

- xi) At present the sub-divisional engineer or an assistant engineer has to collect the architectural drawing from the architectural department. As a result there is a significant cost involving conveyance of the engineer and cost regarding ammonia printing of the drawing. Besides, the sub-divisional engineer has to go to the architectural department five to ten times in order to collect the drawing. This type of cost can be minimized by supplying the architectural drawing through electronic media like internet, as a result not only the cost of conveyance can be reduced but also the time can be saved as well. In this way significant direct and indirect cost regarding the collection of architectural drawing can be decreased.
- xii) There is lack of coordination between the architectural department, structural department and the executive division of Public Works Department. Due to lack of effective communication and coordination, the divisions have to do repetitive works. So in order to improve the purchasing performance the department has to improve the communication

process. The department has to introduce the electronic medial like email in order to improve the communication process and in this way significant time and cost can be minimized in the procurement process.

- xiii) There is significant cost and time involvement in digital survey of the location. This cost can be minimized by using central GPS (Global Positioning System). In developed country, by using GPS and Google earth the digital survey is being done. If we can introduce the same technology we can reduce huge time and cost in this process.
- xiv) The cost of collecting structural drawing can be minimized through proper communication. Time to prepare the drawing can be reduced if the executing division has to send the soil test report to the structural department on time and the engineer of executing division has to consult with the respective structural engineer before doing the soil test. Besides, the structural division should send the structural drawing by using internet and thus can save significant time and money.
- xv) Another suggestion to improve the process is introducing digital signature rule. If the architectural and structural engineer can use digital signature, then they can send their drawing through internet and can improve the process by saving time and cost.
- xvi) If we can prepare a data base of the soil properties in different places in our country then we can save money as we do not need many bore holes while testing of soil.
- xvii) If the preparation of estimate can be done by technically sound person then the errors can be reduced and cost of repetitive printing can be minimized. In this way cost of stationery can be decreased.

- xviii) In order to reduce the cost in preparation of estimate, estimating software can be used. Thus it will take less paper work and it will be more error free and will save huge time and money.
- xix) There is significant cost in preparation of tender documents. If a division can forecast the number of tender documents carefully then the division can prepare less number of tender documents and can save money.
- xx) Using e-tendering the organization can reduce paper work; as a result the bidder can get the tender document in the internet. In this way the organization can control their expenditure.
- xxi) At present the organization has to advertise the invitation for tender in the two national daily newspapers and one local daily newspaper. In order to advertise in the newspapers it takes almost sixty thousand taka. This amount of cost can be eliminated by circulating the invitation for tender in the organization's own website and the website of CPTU.
- xxii) Present practice of verifying the documents of bidders is sending a person physically to check the documents. If the organization maintains the database of the bidders, then document verification cost of bidders can be minimized.

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Survey Questionnaire

Research Topic : Find out the purchasing administrative cost in open tendering method in Public Works Department and suggesting the ways to improve the purchasing performance in Public Works Department.

This is a survey questionnaire for conducting a case study to assess the administrative cost in open tendering method and to find out the ways to reduce cost and time in this method. It is a part of academic necessity for the masters program on ‘Purchasing & Supply Management’ in the Institute of Governance Studies, Brac University. Your sincere response is valuable for the researcher. The researcher assured you that the information given by you will be kept confidential & will be used only for the academic purpose.

Please fill the questionnaire:

1. Name of the Department:

2. Name of the Division:

3. Designation:

4. How long have you been working in this organization?

less than 10 years

10-15 years

15-20 years

more than 20 years

5. Name of the project/work:

6. Total cost of the project/work:TK

7. What is the cost of digital survey?TK

14. How many tender documents a division has to prepare?
- less than 30 30 to 50
 50 to 100 more than 100
15. Cost of invitation for tender:
- i) Advertisement cost in the national daily newspaper:TK
 ii) Advertisement cost in the local daily newspaper:TK
 iii) Suggestions regarding the possible reduction of cost:
16. Cost of opening of tender:
- i) Cost of stationery:TK
 ii) Cost of refreshment:TK
 iii) Honorarium given to the TOC member:TK per person
 iv) Cost of refreshment for the security personnel:TK
 v) Suggestions regarding the possible reduction of cost:
17. Cost of tender evaluation:
- i) Honorarium given to the TEC member:TK per person
 ii) Cost of refreshment:TK
 iii) Suggestions regarding the possible reduction of cost:
18. Cost of verifying the documents of the successful bidder:TK
 Suggestions regarding the possible reduction of cost:
19. How to minimize the overall cost of tendering process:
- -----

Thank you for your cooperation