

Impact of the ‘Public Procurement Rules 2008’ on the  
Implementation of Construction Projects – A Case  
Study on the Public Works Department

**A Dissertation by**

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Implementation of Construction Projects – A Case  
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**Md Aman Ullah**

## **Abstract**

Procurement means the purchasing or hiring of Goods, or acquisition of Goods through purchasing and hiring, and the execution of Works and performance of Services by any contractual means. Public procurement means procurement using public funds. Public sector organizations acquire goods, services and works from third parties through the process of public procurement. The system or process of public procurement in Bangladesh has evolved, modified and developed over time. It was the British Government that introduced public procurement procedure to this country by issuing General Financial Rules. Till 2003, General Financial Rules (GFR) had governed public procurement procedures and practices in Bangladesh. GFR had gone through some minor revisions several times within this period. Practically, any standard legal framework for public procurement was not available. With a view to streamlining the public procurement process and financial delegation, government undertook an array of reforms. This led to the making and issuance of Public Procurement Regulations 2003 issued in October 2003. To expedite the implementation of regulations, the Parliament enacted the Public Procurement Act 2006. Under the primary legislation PPA 2006, the Public Procurement Rules 2008 was framed and issued, which replaced the Public Procurement Regulations 2003.

Whether development or revenue budget, most of the funds allocated for Annual Development Program in Bangladesh is being spent through Public Procurement. In this context, the focus of this research is procurement of works only, which includes construction, maintenance and repair or rehabilitation of buildings, roads, bridges and other infrastructures. The effect of implementing PPR 2008 is put to question and the answer has been brought to light in this research.

The objective of the study is to find out the impact of Public Procurement Rules 2008 on the procurement of works; how the performance of construction projects has been affected after the transformations in the public procurement system. A case study on the Public Works Department (PWD) was performed to come to the truth. Questionnaire survey has been conducted in PWD to gather primary data. In addition, Key Informant Interviews have been conducted to collect invaluable opinions of some senior officers and concerned contractors; their perception regarding the impact of PPR 2008, the reasons behind and suitable suggestions to overcome the negative impacts. To assess the impact on construction project management and implementation, three performance indicators have been set- total procurement time, quality of work and total cost of the procurement.

This study gives the impression that PPA-2006 & PPR 2008 have positive impact on the procurement of works in respect of total time required in its execution. In fact the rules helped in reducing time for processing of tenders / bids and also its completion. PPA-2006 & PPR 2008 have very little in improving quality of construction works. It has rather caused in many occasions, deteriorating the quality of works. The promulgation of the rules & regulations has yet to yield in any positive result on the total cost of procurement. In many cases quality has been shadowed for having cost reduction.

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## Abbreviations

AA: Approving Authority  
BSTI: Bangladesh Standard and Testing Institute  
CIPS: Chartered Institute of Purchasing and Supply  
CPM: Critical Path Method.  
CPTU: Central Procurement Technical Unit  
CPWD: Central Public Works Department  
DPP: Development Project Proposal  
ERD: Economic Relations Division  
GFR: General Financial Rules  
HOPE: Head of Procuring Entity  
IMED: Implementation Monitoring and Evaluation Division  
IEC: International Electro-technical Commission  
ISO: International Organization for Standardization  
LGED: Local Government Engineering Department  
NOA: Notification of Award  
OGC: Office of the Government Commerce, UK  
PE: Procuring Entity  
PPA 2006: Public Procurement Act 2006  
PPR 2008: Public Procurement Rules 2008.  
PWD: Public Works Department  
REB: Rural Electrification Board  
RHD: Roads and Highways Department  
TEC: Tender Evaluation Committee  
VFM: Value for Money

### INTRODUCTION

#### 1.1 Background of the study

The importance of developing standard public procurement system can be easily realized only from the volume of public procurement all over the world. Even in Bangladesh the amount is so big that the increasing volume of public procurement in this country demanded development of sound legal process in this arena. The average annual volume of public procurement was estimated to be around US\$3.0 billion in Bangladesh (Islam, 2011 refered World Bank, 2002) where about 70 per cent of annual budget is spent through public procurement (Islam, 2011 cited Ellmers, 2011; The Daily Star, 2010).

Until 2003, General Financial Rules (GFR) had regulated public procurement procedures and practices in Bangladesh. These rules were originally issued during British period and slightly revised in 1951 under the Pakistani rule. After the independence of Bangladesh, few alterations were made to these rules in 1994 and 1999 respectively (Islam, 2011 cited Mahmood, 2010). The major Government Departments, such as, Roads and Highways Department, Public Works Department, Bangladesh Railway, Local Government Engineering Department (LGED), Directorate of Health Services, Directorate of Education etc. carry out substantial amount of procurement through their central to local offices spread all over the country. The public sector corporations and semi-autonomous bodies such as the Water Development Board, Rural Electrification Board, Dhaka Electricity Supply Authority, Dhaka Water and Sewerage Authority (WASA), Port Authorities etc. also handle a major share of public procurement.

GFR merely set down broad and general principles for public procurement to be followed and allowed the departments to frame detailed rules and procedures for their respective purchases. All government organization had been referring to the Manual of Office Procedure (Purchase) compiled by the Department of Supply and Inspection as the guide for procurement of goods and the Public Works Department (PWD) code as the guide for works. Separate Guidelines, modeled on World Bank Procurement Guidelines, were issued in 1992 by the Economic Relations Division (ERD) for the procurement in externally funded projects (Islam, 2011).

Before there was no standard and legal framework for public procurement in Bangladesh. Major percentage of our Annual Development is being spent through procurement, hence it created a concern for streamlining the country's public procurement system. For that reason,

government undertook an array of reforms in order to strengthen the public procurement regime. The reform process ultimately led to the making and issuance of Public Procurement Regulations in 2003, providing a unified procurement processing system. Further later, in order to intensify the improvement measures in the public procurement system, the House of the Nation enacted the much desired law, the Public Procurement Act 2006 (hereinafter PPA 2006). Under the Act of 2006, the Public Procurement Rules 2008 (hereinafter PPR 2008) was framed and issued, which replaced the Public Procurement Regulations, 2003 which until then continued to have effect. The Preamble to the PPA 2006 says that the objective of this law has been to provide for procedures to be followed for ensuring transparency and accountability in the procurement of goods, works and services using public funds and for ensuring equal treatment and a free and fair competition amongst all persons wishing to participate in public procurements (Hoque, 2010).

As discussed earlier, major portion of the Annual Development Programme is being spent through public procurement. Again a remarkable portion of public procurement is being done for procurement of works i.e. for construction of buildings, roads, bridges and other infrastructures. Though the main objective of enacting PPA 2006 & introducing PPR 2008 was, generally, of achieving value for money, ensuring transparency, accountability, fair treatment etc.; but improving performance of project management by attaining quality construction with optimum cost and time was also one of the important objective for procurement of works i.e. procurement of construction projects in particular. We have passed few years in the changed procurement system. Hence, now time has come to assess the impact of Public Procurement Rules 2008 on the implementation of construction projects. How the projects parameter- quality, cost and time have been impacted by the procurement rules need to be critically assessed. How the performance of construction projects has been impacted after the transformational change in the public procurement system will be assessed in this research work by conducting a case study on the Public Works Department.

Public Works Department (PWD) is a government organization under the Ministry of Housing and Public Works. It is one of the major government organizations that deal with the construction of different infrastructure/ physical facilities under delegated procurement from different ministries. 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 also the Government's biggest construction agency. A strong base of standards and professionalism has been developed in the PWD over the years of experience. It has prestigious accomplishment in the field of building construction. PWD constructed huge number of landmark buildings and structures that have architectural beauty (<http://www.pwd.gov.bd>).

As discussed earlier, PWD has construction experience for more than 150 years. How PWD coped with the new procurement system and how much the PPR 2008 has impacted its construction management activities will be a representative measure of impact on procurement of works for nation as a whole. For this reason, PWD has been chosen for conducting the research work.

## **1.2 Statement of the problem**

A transformational change has occurred in the field of public procurement of Bangladesh after the introduction of PPR 2008. A debate is prevailing among the executives of different government organizations regarding the effectiveness of PPR 2008. Pros and cons of new procurement system are being weighed against one another. One group argue that the previous system of procurement was better. On the other hand, the other group believes the present system of procurement is far better than the previous system. Some people criticize the PPR 2008 and comment that the World Bank prescribed this procurement system in our country for favoring few Multinational Companies (MNCs). This group also thinks that the World Bank has been influencing the governments, mostly of third world countries, for introducing a procurement system for establishing the interest of their own.

In the field of procurement of works i.e. procurement of construction projects, a group of executives argue that PPR 2008 has adversely affected the performance of construction projects. On the other hand, the other group comment that after the introduction of PPR 2008, a discipline has developed in the public procurement system and thus it has positively influenced procurement of works. Hence, time has come to uncover the reality behind this debate. In fact, this debate is the driving force of the present study.

## **1.3 Research Question**

The main research question for this study is whether introduction of Public Procurement Rules 2008 has positively impacted 'performance of procurement' of construction projects or not? In the pursuit of the answer of the above stated question, key performance indicators of projects - quality, cost and time will be studied. So, in other words, the main research question of this

study is whether PPR 2008 has expedited projects completion, has improved quality of works and has reduced project-cost.

#### **1.4 Objectives of the study**

The objective of the study is to find out the impact of Public Procurement Rules 2008 on the procurement of works. More specifically, the objectives of this study are to assess the impact of the Public Procurement Rules 2008 on the project's key performance parameters- total project implementation time, quality of works and total cost of construction projects.

#### **1.5 Theoretical Framework of the study**

Few researches have been conducted on PPA 2006 & PPR 2008 so far. Among these researches, in most of the cases, the issue of corruption, transparency, accountability have been addressed. For example, Shakeel Ahmed Ibne Mahmood did a research in 2010 on "Public procurement and corruption in Bangladesh: confronting challenges and opportunities". Ridwanul Hoque in 2010 conducted a research on "Public Procurement Law in Bangladesh: From Bureaucratisation to Accountability". Mohammad Sirajul Islam worked in 2011 on "Improving Transparency in Public Procurement in Bangladesh: Use of Right to Information and Whistleblowers' Protection laws at sub national levels".

Every 'Procurement of Works' is interlinked with the issue of 'Project Management'. On the other hand, every public procurement must comply with the PPR 2008. Hence, issue of 'PPR 2008' and 'Project Management' need to be addressed simultaneously for the 'Procurement of Works' in the public sector. Different scholars conducted research on different areas of 'Project Management'. But there is scarcity of research work where both 'PPR 2008' and 'Project Management' have been addressed simultaneously. For this reason, an area is chosen for research where synchronisation of 'PPR 2008' and 'Project Management' would be possible. The impact of PPR 2008 on the 'Construction Project Management' is the broad area of this research work.

Many scholars identified three project parameters- 'Project completion time', 'Quality' and 'Total project cost' with the success of any project. Hence, assessing the impact of PPR 2008 on the

three variables of any project- 'Project completion time', 'Quality' and 'Total project cost' are chosen for this study from the following theoretical framework given by different scholars.

## 1.6 Project objectives and the Iron triangle

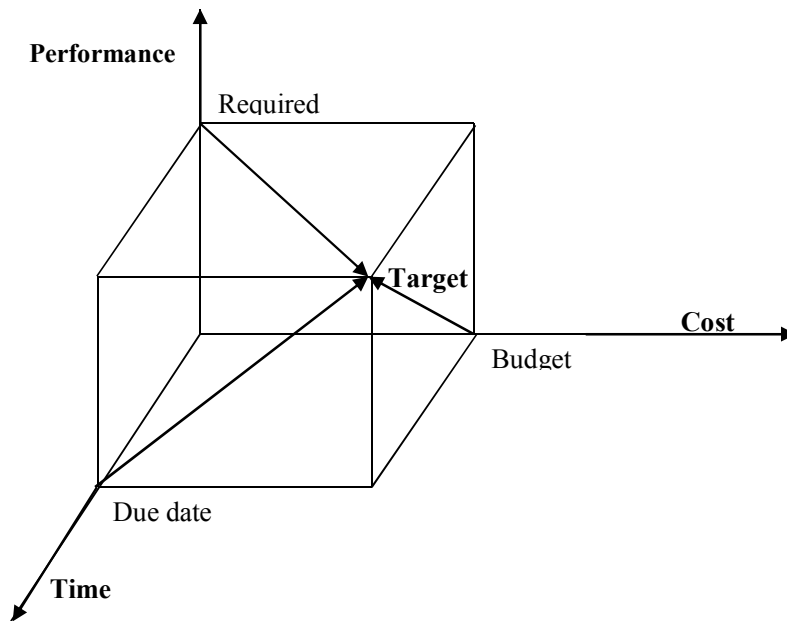
Meredith, J.R and Mantel S.J. Jr, (2003) argued that there is a tendency to think of a project solely in terms of its outcome- that is, its performance. But the time at which the outcome is available is itself a part of the outcome. The completion of a building on time and on budget is quite a different outcome from the completion of the same physical structure a year late or 20 percent over budget or both. They identified three targets of every project. The targets are:

i) **Due date**- There must have a time period for completion of every project. The success of a project depends on its completion within the specified date.

ii) **Required performance or quality**- The quality of work or in other words performance is also one of the important targets of a successful project. A project that is completed within budget limit and within due date cannot be called a successful one if the quality of work is not up-to the mark.

iii) **Budget limit**- The resources necessary to complete a project must be limited to predetermined amount. Budget limit is one of the important targets of each project.

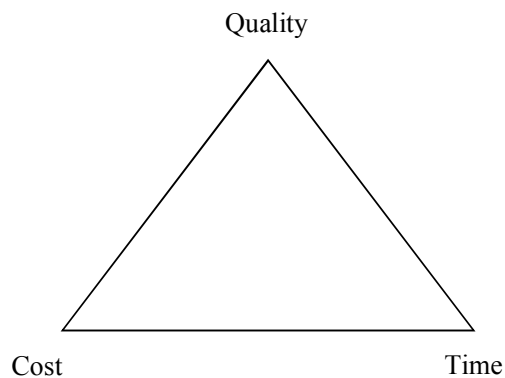




Source: Meredith, J.R and Mantel S.J. Jr (2003)

Figure 1.1: Project targets- performance, cost, time

In the official course book on 'Advanced Project Management' of the 'Chartered Institute of Purchasing & Supply', the main objectives of most projects has been described as: quality, cost and time (QCT). This three parameters sometimes, conflicting to one another is termed as the 'project objectives triangle' or the iron triangle.



(Source: Official CIPS course book on Advanced Project Management)

Figure 1.2: The project objective triangle or iron triangle

In an ideal world, we would like all projects to finish on time, within budget and to the highest level of quality. However, the relative importance of each objective may depend partly on the type of project concerned and a compromise is needed among these three variables.

## 1.7 Variables of the study

The variables for this research work are:

- a) Total project implementation time.
- b) Quality of work.
- c) Total cost of the project.

## 1.8 Operational definition of the variables

**Total project implementation time:** It is the total time required to complete a construction project from inception of a project up to its completion. It includes time required for tendering process, evaluation process, approval process, contract signing process and finally physical construction work implementation process.

**Quality of work:** Quality of work generally means conformity to the specification. Quality may relate to a number of relevant factors including functionality, durability, esthetic appropriateness to surroundings, long-term adaptability and maintenance, environmental implications, improve build-ability etc. Quality control in construction typically involves ensuring compliance with minimum standards of material and workmanship in order to ensure the performance of the facility according to the design. These minimum standards are contained in the specification ('Construction Procurement Manual' of the Scottish Government Publication).

**Total Project Cost:** It is the total cost that is incurred to complete a project. It includes cost of land acquisition, cost of tendering process, cost of tender evaluation, cost of contract signing and total payment to contractors for the construction work. As the money has time value, the timing of expenditure is also important to assess the total project cost.

## **1.9 Methodology**

### **1.9.1 Methods of collecting data**

Questionnaire survey was adopted for collecting primary data in this research work. The key informant interview has also been conducted with senior officers of PWD and few selected suppliers (contractors). Questionnaire survey was conducted on 25 officers from different levels of PWD those who had experience of construction management before and after introduction of PPR. Before asking for filling the questionnaire, the general idea of the research objectives were exchanged with them. After the exchange of general idea of the research objectives, the questionnaire was given to them. They were requested to fill the questionnaire based on the practical experience they had regarding the implementation of the construction projects. Both open end and close end questions were set in the questionnaire to reveal the real perception of the respondents. For key informant interview, few senior officers and selected contractors were interviewed. They were asked to give their perception regarding the impact of PPR 2008 on the 3 project parameters- total procurement time, quality of works and total project cost.

### **1.9.2 Sample size, population size and sampling method of collecting data Performance indicators and their measurement**

The sample size for this study was determined to be 25 as the scope and time frame of the study was limited. Employees involved in the managerial functions right from the Sub-divisional engineer up to the Chief engineer of the organization are considered as decision making body for procurements. There are approximately 500 such personnel in this organization. Hence the population size of the organization has been considered as 500. A sample of 25 out of 500 means around 5% of the population, hence the sample may be considered statistically significant. However, non-probability convenient sampling method was used to collect data for the study.

### 1.9.3 Place of study and study period

Survey was conducted from 10 November, 2014 to 20 November, 2014 at different offices of the Public Works Department (PWD). Only the offices situated in Dhaka were visited for this survey.

### 1.9.4 Analysis tools used

Different types of statistical analytical tools have been used to analyze and interpret the subject matter of the study like frequency distribution table and central tendency test (mean, mode, median). Frequency distribution table and central tendency test have been done to analyze the findings of the sample. The graphical representations of the answers in the form of 'pie chart' have been demonstrated for easy understanding of the responses.

## 1.10 Performance indicators and their measurement

Research question, indicators used to address the research question and the way of measuring performance indicators are presented in the following table.

**Table 1.1 Key performance indicators and their measurement**

<b>Research question</b>	<b>Indicators used to address the question</b>	<b>Way of measuring performance indicators</b>
Whether introduction of Public Procurement	<ul style="list-style-type: none"><li>• Total procurement time</li></ul>	Perception based qualitative judgement in a scale of 1 to 5.

Rules 2008 has positively impacted 'performance of procurement' of construction projects?	<ul style="list-style-type: none"> <li>• Quality of work</li> </ul>	Perception based qualitative judgement in a scale of 1 to 5.
	<ul style="list-style-type: none"> <li>• Total procurement cost</li> </ul>	Perception based qualitative judgement in a scale of 1 to 5.

### 1.11 Limitations of the study

The limitations of this study have come from both its scope and methodology. Survey was conducted in the PWD but not every office of the organization was included in this study. The respondents were selected from those who were available in the head office of the organization. Officers were selected on the basis of researcher's convenience. Key informant interview was conducted on few senior officers and selected suppliers (contractors). Selection of officers were done from Dhaka city only and the suppliers (contractors) were selected based on their interest to share their experience. Time constraint was also one of the major limitations of the study. Most of the respondents had gathered different types of experiences in different projects; sometimes experiences were not generalized rather project-specific. Moreover the impact on project quality, time and cost might differ for various reasons. During personal interview, some of the respondents raised this issue. Then they were requested to answer based on their own perception. For the same situation, however, the perception might be different to different respondents, which might be a major limitation of this study.

### 1.12 Chapter Outline of the Study

This report consists of five chapters and five appendices. In the first chapter, the study has been introduced. The second chapter "Literature Review" provides some fundamental knowledge on procurement and project management. In the third chapter PPR 2008 has been critically analyzed based on its impact on completion time, quality and cost of projects. The findings of the study are presented in chapter four and relevant conclusions and recommendations are provided in the following chapter.

The chapters are followed by five appendices. Key terms in PPR 2008 are mentioned in appendix A. Rules and sub-rules of PPR 2008 relevant to completion time, quality of construction and project cost are stated in appendix B. Appendix C, D and E contain questionnaire used in the survey, tables and pie charts respectively.

### LITERATURE REVIEW

#### 2.1 Public procurement

Office of the Government Commerce, UK has defined public procurement as the process whereby public sector organizations acquire goods, services and works from third parties. It includes much that supports the work of government and ranges from routine items (e.g. stationery, temporary office staff, furniture or printed forms) to complex spend areas (e.g. construction, Private Finance Initiative projects, aircraft carriers or support to major change initiatives).

In the Public Procurement Act 2006, the term 'procurement' itself has been broadly defined to include purchasing or hiring of goods or acquisition of goods through hiring and purchasing, execution of works and performance of any services by any contractual means (Hoque, 2010).

#### 2.2 Value for Money (VFM) in the public procurement

In the "Construction Procurement Manual" of the Scottish Government Publication, the prime objective of public procurement is defined as to achieve VFM - the optimum combination of whole life cost and quality to meet the customer's requirement. VFM does not necessarily mean accepting the lowest bid; rather quality, as well as price, must be considered when appointing consultants and contractors. The greatest opportunity for achieving VFM occurs at project inception. Correct project definition is essential to meet the users' needs while achieving VFM.

#### 2.3 'Scope Triangle' or the 'Quality Triangle' of a project

Jenkins, N. ( 2000-2010) defined “Scope Triangle” or the “Quality Triangle” that illustrates the relationship between three primary forces in a project. Time is the available time to deliver the project, cost represents the amount of money or resources available and quality represents the fit-to-purpose that the project must achieve to be a success. The normal situation is that one of these factors is fixed and the other two will vary in inverse proportion to each other. For example, if quality level is fixed then the cost of the project will largely be dependent upon the time available. A phenomenon known as “Scope creep” can be linked to the triangle too. When the scope starts to creep, new functionality must be added to cover the increased scope.

## **2.4 Cost control, time control and quality control**

In the “Construction Procurement Manual” of the Scottish Government Publication, it has been described that changes to design, especially after contract award, is one of the major causes of cost overruns and of not achieving VFM. Changes arise mainly as a result of unclear or ambiguous project definition, inadequate time spent in project planning, risk analysis and management or due to changing circumstances. The consequence of changes during the construction stage can be many times greater than the direct impacts of the changes. The need for changes should be minimized by: having early discussions with outside authorities to anticipate their requirements.

In the mentioned manual, method of time control is described. The project sponsor must be able to identify clearly those tasks which lie on the critical path. If the time taken for an activity exceeds its time allowance, there are essentially only two forms of corrective action available; the re-sequencing of later activities or shortening the time allowance for future activities by increasing the resources to be made available for them (this option will normally result in extra costs). If neither is done, the overall time budget will be exceeded and the project will finish late.

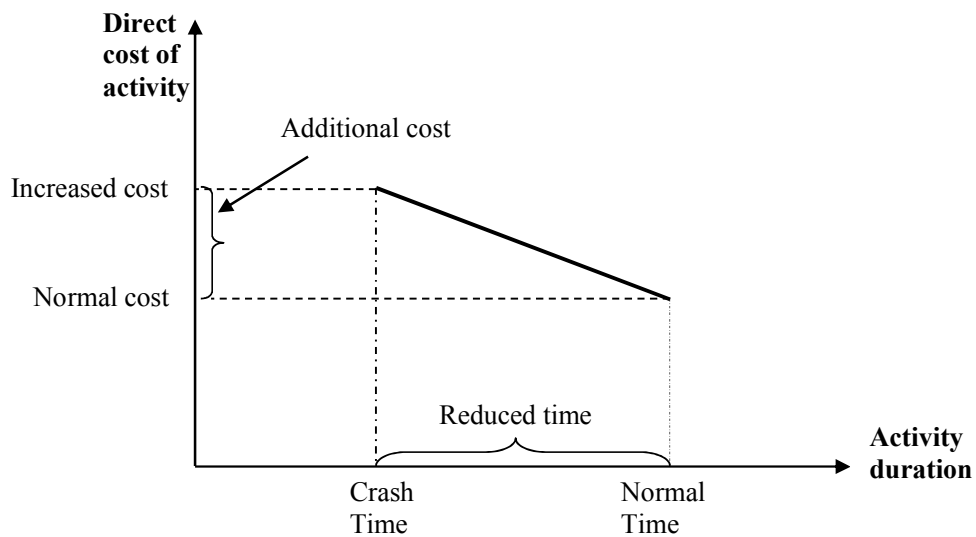
In the same manual, the process of quality control is explained. Quality control in construction typically involves insuring compliance with minimum standards of material and workmanship in order to ensure the performance of the facility according to the design. These minimum standards are contained in the specifications. Hendrickson C. and Au T.( 2008) argued as with cost control, the most important decisions regarding the quality of a completed facility are made during the design and planning stages rather than during construction. Quality control during construction consists largely of ensuring conformity to this original design and planning decisions. Quality requirements should be clear and verifiable, so that all parties in the project can understand the requirements for conformity.



## 2.5 Critical Path Method and Gantt chart for controlling project targets

Critical Path Method (CPM) is used to control both the time and cost aspects of a project, in particular, time and cost trade-offs. CPM is very suitable for construction projects. In CPM, activities can be "crashed" at extra cost to speed up the completion time. This technique identifies a project critical path with activities that could not be delayed and also indicated activities with slack that could be somewhat delayed without lengthening the project completion time.

Schedules should be evaluated not merely in terms of meeting project milestones, but also in terms of the timing and use of scarce resources. Activities of the project can be expedited by employing more resources. This is called crashing of the project. Crashing a project causes shortening of critical path duration. Crash times result from an attempt to expedite the activity by the application of additional resources- for example, over-time, special equipment and additional staff or material. The relationship between time and activity cost is usually approximately downward sloping straight line like shown in the following figure 2.1.



(Source: Chandra, P. 2008)

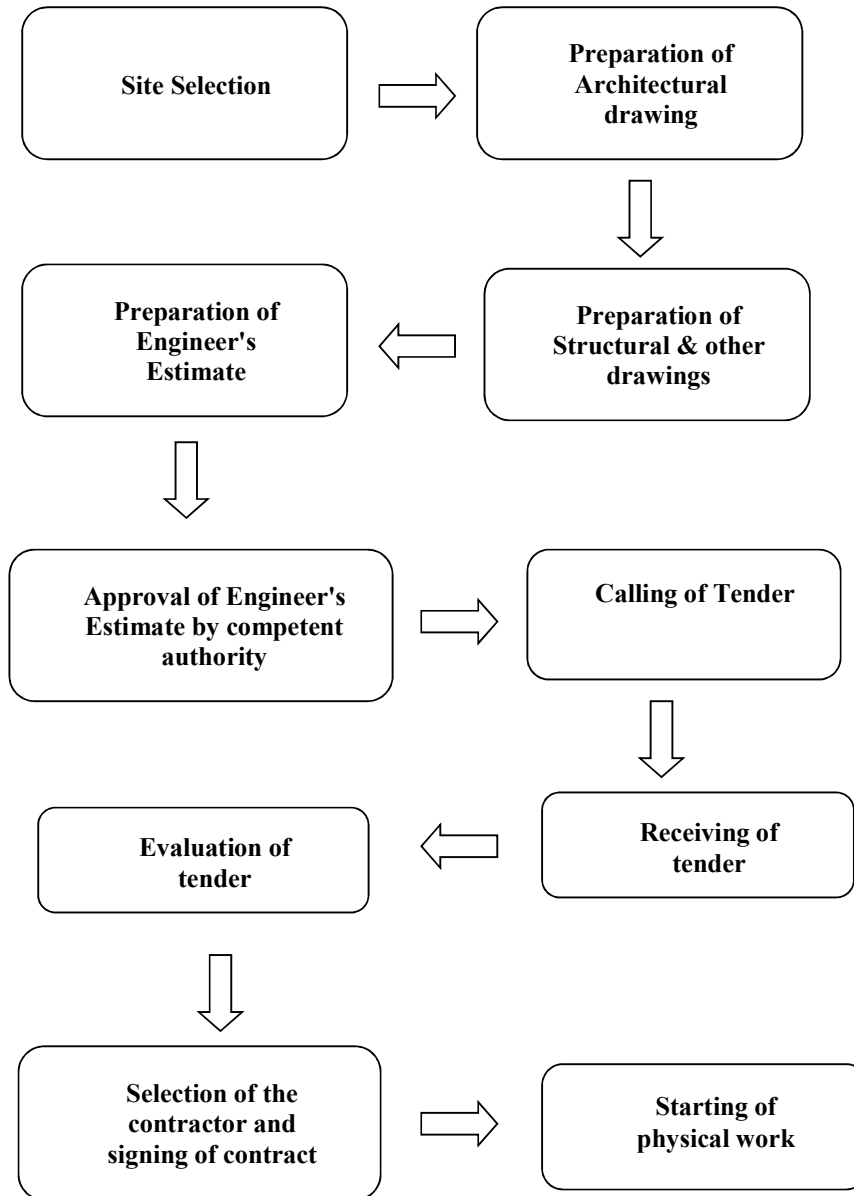
Figure 2.1: Relationship between Direct cost of activity and activity duration

The Gantt chart shows planned and actual progress for a number of tasks displayed against a horizontal time scale. It is particularly effective and easy-to-read method of indicating the actual current status for each of a set of tasks compared to the planned progress for each item of the set. As a result, the Gantt chart can be helpful in expediting, sequencing and reallocating resources among tasks. Gantt chart provides a picture of the current state of a project.

## **2.6 Activities prior to commencement of construction work**

A government project is initiated once it is included in the Development Project Proposal (DPP). After the approval of DPP, the project to be included in the annual procurement plan and necessary fund to be allocated. Some procedure has to be followed before commencement of physical work, once decision is taken to implement a construction work. The preparation of architectural drawings is the first step followed by preparation of structural drawings, electro-mechanical drawings and other related drawings for the proposed construction. On the basis of the drawings, preparation of "Engineer's Estimate" is done. The approval of the same is done by the competent authority. Once the fund is available and approved 'Engineer's Estimate' is available, tender is called. Then the receiving of tender followed by evaluation of the tenders are done by the Tender Evaluation Committee (TEC). On the basis of the evaluation criteria, tenders are evaluated. The next step is approval of tender and thus contractor is selected. Then Notification of Award (NOA) is given and contract agreement is signed between PE and contractor. After the signing of contract, physical work is commenced based on the drawings, design and agreed bill of quantities. The activities involved before commencement of physical work is shown in the following flow chart in the next page.

**Figure 2.2: Flow Chart of activities prior to commencement of construction work**



(Source: Chakraborty, 2009)

## 2.7 Summary of literature review

Public procurement is the process of acquiring goods, service and works from third parties using public fund. Value for money is important for any public procurement. Performance of

every procurement of works, specifically procurement of every construction projects, can be evaluated by the three interlinked indicators- total procurement time, quality of works and total cost of procurement. Time control, quality control and cost control, sometimes conflicting to each other, are main challenges for project managers.

Changes to design after contract award are major causes of cost overruns. Unclear or ambiguous project definition, improper planning, inadequate risk analysis etc. are responsible for changes. Ensuring conformity to specification is the main way of controlling quality of construction projects during execution. Identification of critical activities are important for controlling time of construction projects. Critical Path Method (CPM) and Gantt chart are mainly used for time control of every construction projects. Allocation of scarce resources is also very important for time and cost control. A compromise is needed among these three key performance indicators of construction projects depending on the resource available and priority of individual project.

### CRITICAL ANALYSIS OF PPR 2008

#### 3.1 An overview of the PPR 2008

"Procurement" means the purchasing or hiring of Goods, or acquisition of Goods through purchasing and hiring, and the execution of Works and performance of Services by any contractual means. When procurement is done with public money, than it is called public procurement. Public Procurement Rules 2008 was framed by the government of Bangladesh under the Public Procurement Act 2006 which has come into effective on January 31, 2008. The main objective of enacting PPA 2006 and introducing PPR 2008 was, generally, achieving value for money, ensuring transparency, accountability, fair treatment in all public procurement throughout the public sector organizations of our country.

There are 130 Rules in PPR 2008 under nine chapters. Most of the Rules have several Sub-Rules. In Chapter one, there are 3 Rules (Rule 1 to Rule 3) where preliminary issues like definition of key terms, scope and application of the Rules are given. There are 9 Rules (Rule 4 to Rule 12) in Chapter two. Guideline for preparation of Tender or Proposal document, constitution of different committees for disposal of Tender or Proposal are given in this chapter. In Chapter three, principles of public procurement is given. This is a very big chapter divided into twelve parts. There are total 48 Rules (Rule 13 to Rule 60) under Chapter three where, among others, procedure for preparation of technical specification, preparation of terms of reference, procedure for rejection of Tender, approval procedure of Tender, contract administration and management are described. Rule 61 to Rule 89 constitutes Chapter four where methods of procurement for goods and related services, works, physical services and their use are given. Processing of procurement including advertisement, pre-qualifications, processing of Tenders etc. are given in Chapter five where there are 13 Rules (Rule 90 to Rule 102). In Chapter six, guideline for procurement of intellectual and professional services is given where there are 24 Rules (Rule 103 to Rule 126). Rule 127 and Rule 128 constitute Chapter seven and chapter eight respectively. Professional misconduct is described in Chapter seven and E-government procurement is described in Chapter eight. In Chapter nine, miscellaneous issues are described where there are 2 Rules (Rule 129 and Rule 130).

### **3.2 Evolution of public procurement system in Bangladesh**

During British era, General Financial Rules (GFR) were originally issued and slightly revised in 1951 during Pakistan period; these rules were further revised in 1994 and 1999 after independence of Bangladesh which had regulated public procurement procedures and practices in Bangladesh until 2003. General and broad principles for public procurement was set down in the GFR. However, the individual department was responsible to frame detailed rules and procedures for their respective purchases. In this regard, all government organization had been referring to the Manual of Office Procedure (Purchase) compiled by the Department of Supply and Inspection as the guide for procurement of goods and the Public Works Department (PWD) code as the guide for procurement of works. Separate Guidelines, modeled on World Bank Procurement Guidelines, were issued in 1992 by the Economic Relations Division (ERD) for the procurement in externally funded projects (Islam, 2011).

In the context of escalating concerns for streamlining the country's public procurement system, the government undertook an array of reforms in order to strengthen the public procurement regime. The reform process ultimately led to the making and issuance of Public Procurement Regulations in 2003, providing a unified procurement processing system. Before then, in fact, there was no standardized procurement system in Bangladesh. However, the legal and more standardized system evolved after the enactment of Public Procurement Act 2006, and subsequent Public Procurement Rules 2008. This act and Rules were come into effective on January 31, 2008. There was no legal framework for managing public procurement until Public Procurement Act 2006 was passed in the parliament of Bangladesh. Under the Act of 2006, the PPR, 2008 was framed and issued, which replaced the Public Procurement Regulations, 2003 which until then continued to have effect.

### **3.3 Rules of PPR 2008 on time, quality and cost issue of procurement**

The present research work is basically the assessment of impact of PPR 2008 on the performance indicators of construction project management. Hence, the relevant Rules and Sub-Rules of PPR 2008 need to be critically analysed. Related Rules and Sub-Rules<sup>2</sup> are identified for such analysis which are presented in the next page:

**Table 3.1: Performance indicators Vs Rules and Sub-rules of PPR 2008**

<b>Performance indicator of project management</b>	<b>Rules and Sub-Rules of PPR 2008 influence the corresponding performance indicator of project management</b>
Total procurement time	Among others, Rule 19, 25, 27 and Sub-Rule 22(1), 38(5), 38(14), 39(1), 39(2), 39(3), 39(4), 39(27).
Quality of works	Among others, Rule 27, 28, 29 and Sub-Rule 4(4), 4(5), 29(2), 29(3), 29(4), 29(5), 38(3), 38(5), 39(1), 39(5), 39(6), 39(7), 39(8), 39(29), 39(32).
Total procurement cost	Among others, Sub-Rule 28(2), 38(5), 38(9), 38(10), 38(11), 38(14), 39(1).

### **3.4 Analysis of Rules influencing total procurement time**

For controlling the time required between submission of Tender and issuance of Notification of Award (NOA), 'Tender validity period' is incorporated as mentioned in Rule-19. The validity period shall be determined depending on the complexity of the Tender and is usually 60 to 120 days. However, there is provision for extension of Tender validity period under exceptional circumstances. For discouraging the submission of Tenders with ill motive to create disturbance in the procurement process, provision of 'Tender security', usually 2-3% of the estimated price of the Tender, is incorporated in Rule-22. Sub-Rule (1) under this Rule states: "To discourage the submission of Tenders with ill motive, a Procuring Entity may include in the Tender Documents a condition that Tenders must be accompanied by a security in the form of, at Tenderer's option, a bank draft, pay order, or bank guarantee using the standard format attached to the Tender documents, issued by a scheduled bank of Bangladesh". In Rule 25, provision of forfeiture of 'Tender security' is kept. These Rules help controlling time of Tender processing and thus in turn controlling total procurement time.

For ensuring performance of the procurement with respect to control quality and completion time Rule 27 is introduced. As per this Rule, a sum of money in the form of a Bank draft, pay order or a Bank Guarantee, ranging from 5 to 10% of the contract price shall be furnished by the successful Tenderer. However, if the TEC considers the Tender unbalanced as a result of front loading or price quoting abnormally lower than the official estimated price of Tender, they may recommend to Procuring Entity for taking performance security up to 25% of the estimated price of the Tender for ensuring performance of the procurement.

For the purpose of controlling time, cost and quality, Sub-Rule (5) under Rule 38 states: “Project management may require a review of the design in addition to the supervision of construction from inception to completion and handing over for the purpose of controlling time, cost and quality as well as fulfilling contractual obligations”. For time and cost management, Sub-Rule (14) provides guideline as to how the agreed sum including liquidated damages from the Contractor will be recovered.

Detailed guideline for Works Contract Administration and Management is provided in Rule 39. For the purpose of controlling time, cost and quality, guideline is given in Sub-Rule (1) as to how the Project Manager shall ensure that within the time, the Contractor submits to the Project Manager for approval of a Program showing general methods, arrangements, order and timing of all activities in the Works. Authority is given to the Project Manager in Sub-Rule (2) for withholding any payment certificates under the terms of the contract until the Work Program has been submitted by the Contractor. If a Compensation Event occurs or a Variation Order is issued which does not make it possible to complete the Works by the Intended Completion Date without the Contractor incurring additional cost, provision is given in Sub-Rule (3) and (4) for extending the Intended Completion Date. For controlling time of completion, approval from the Head of Procuring Entity need to be taken if more than 20% increase in time is required for a Contract. For controlling time of the Contract, provision is given in Sub-Rule (27), for deducting liquidated damage from the payment due to the Contractor for delay in execution.

### **3.5 Analysis of Rules influencing quality**

For ensuring performance of the procurement with respect to control quality and completion time Rule 27 is introduced. As discussed earlier, as per this Rule, a sum of money is taken by the procurement entity as ‘performance security’ for ensuring quality of works. Rule 28 is for ensuring quality of works both during and after the execution. This Rule instructs the Procuring Entity for deducting retention money at a percentage up to 10% from each bill due to a Contractor until completion of the whole works. On completion of the whole works, half the total amount retained shall be repaid to the Contractor and the remaining amount may also be paid to the Contractor if an unconditional Bank guarantee is furnished for that remaining amount. The remaining amount or the Bank guarantee shall be returned after the expiry of defects liability period and issuance of all Defects Correction Certificate, should there be any defects identified.

Guideline for preparation of technical specifications is given in Rule 29. Both quality and transparency issue is incorporated in this Rule. As per this Rule, a Procuring Entity shall at the



time of describing requirements in respect of a particular object of procurement provide among others the following information: i) quality of Goods, Works or Services; ii) required performance Standards and life span; iii) safety Standards and limits ; iv) test procedure, if any, for conformity assessment of Goods etc. Sub-Rule (2) under this Rule instructs to use performance specification instead of conformance specification for ensuring proper competition. This Sub-Rule insists on using international standards of national or authorized national standards or code or generic name. For ensuring transparency Sub-Rule (3) under Rule 29 states: "There shall be no reference, in technical specification of Goods, to a particular trade mark or trade name, patent, design or type, named country of origin, producer or service Supplier". Sometimes this Sub-Rule impacts the quality issue negatively. However, if a Procuring Entity does not possess adequate technical expertise for preparing generalized technical specifications to make the specifications fully understandable to Tenderers it can make a reference to a particular branded product as instructed in Sub-Rule 29(4). In such case, the words "or similar or equivalent" to the specification shall be added. For generalization of technical specification as per Sub-Rule 29(5), among others, standards approved or published by following organizations shall be used: i) the International Organization for Standardization (ISO); ii) the International Electro technical Commission (IEC); and iii) Standards determined by Bangladesh Standard and Testing Institute (BSTI) or any other national or international institute.

For maintaining quality of procurements, Sub-Rule (3) under Rule-38 states: "The Procuring Entity shall ensure that Goods, Works or Services to be procured conform to the technical requirements set forth in the procurement Contract, and for such purpose, the Procuring Entity may establish inspection and testing facilities, form inspection teams, enter into arrangements for the joint or collective use of laboratories and inspection and testing facilities, and contract with others for inspection or testing work as needed". For the purpose of controlling time, cost and quality; Sub-Rule (5) under Rule 38 is incorporated in PPR 2008 as discussed earlier.

For the purpose of controlling time, cost and quality, guideline is given in Sub-Rule (1) of Rule-39 as discussed earlier. For controlling quality of Works, guideline is given in Sub-Rule 39(5), 39(6), 39(7) and 39(8). The Project Manager shall check the works executed by the Contractor and notify the Contractor of any Work Defects. The Project Manager may instruct the Contractor to search for a Defect or to uncover and test any work that the Project Manager considers may have a Defect. Sub-Rule 39(7) states: "The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Contract; and the Defects Liability Period shall be extended for as long as Defects remain to be corrected". If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount so assessed. For controlling quality, Sub-Rule 39(29) provides the Project Manager authority of issuing a Defects Liability Schedule,

should there be any defects, stating the scope of the corrections or additions that are necessary. If the corrections or additions scheduled by the Project Manager have been completed, the Project Manager shall issue a Defects Correction Certificate. On the other hand, if the Final Account of Works is unsatisfactory even after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate. For ensuring quality, Sub-Rule 39(32) provides the Project Manager authority of issuing a Certificate of Completion of the Works upon deciding that the work is completed with appropriate quality.

### **3.6 Analysis of Rules influencing total cost of procurement**

For controlling contract price, Sub-Rule (2) under Rule 28 states “On completion of the whole Works, half the total amount retained shall be repaid to the Contractor and the remaining amount may also be paid to the Contractor if an unconditional Bank guarantee is furnished for that remaining amount”.

For the purpose of controlling time, cost and quality; Sub-Rule (5) under Rule 38 states: “Project management may require a review of the design in addition to the supervision of construction from inception to completion and handing over for the purpose of controlling time, cost and quality as well as fulfilling contractual obligations”. For controlling the cost of the project, Sub-Rule 38(9) states: “The price of a contract shall usually be fixed in which case the unit prices may not be modified in response to changes in economic or commercial conditions except when a Contract for Works has a provision for price adjustment”. In the case of contracts with price adjustment, clear guideline is given in Sub-Rule 38(10) for such adjustments. There is also clear guideline regarding increase in the Bill of Quantities for Works exceeding permissible percentage of the initial contract price in Sub-Rule 38(11). For time and cost management, Sub-Rule 38(14) provides guideline as to how the agreed sum including liquidated damages from the Contractor will be recovered.

For the purpose of controlling time, cost and quality, guideline is given in Sub-Rule (1) under Rule 39 instructs as to how the Project Manager shall ensure that within the time, the Contractor submits to the Project Manager for approval of a program showing general methods, arrangements, order and timing of all activities in the Works.

### FINDINGS AND ANALYSIS

As mentioned before, the purpose of this study is to find out the impact of Public Procurement Rules 2008 on the procurement of works in the light of the impact on the key performance parameters- total procurement time, quality of works and total cost of construction projects. The main research question of this study is whether PPR 2008 has expedited projects completion, has improved quality of works and has minimized total project-cost.

A case study has been conducted on the Public Works Department, Bangladesh. For this purpose, questionnaire survey has been conducted on the officers of the Public Works Department (PWD), Bangladesh who have practical experience of contract management for works. The respondents include Superintending Engineer, Executive Engineer and Sub-divisional Engineer of the organization. Sample questionnaire is presented in appendix-C. In addition to the questionnaire survey, Key Informant Interview has been conducted. In this regard, 6 senior officers of the organization have been interviewed. Moreover, 5 contractors (suppliers), who are the part of contract implementation team, have also been interviewed to get their perception regarding PPR 2008.

The respondents have been asked questions broadly on the three key performance indicators of construction project management- total procurement time, quality of work and total cost of procurement.

#### 4.1 General information about sample of the questionnaire survey

Sample size	: 25 (Number of people surveyed)
Designation	: 5 nos Superintending Engineer 8 nos Executive Engineer and 12 nos Sub-divisional Engineer
Work Experience	: Less than 10 years- 12 persons Between 10 to 15 years- 8 persons More than 15 years- 5 persons

## 4.2 Overview of the survey questions

In order to get the perception of the respondents regarding the impact of PPR 2008 on the project's key performance parameters, 12 questions have been set out of which 4 for project implementation time, 4 for quality of works and 4 for project cost. The respondents have been asked to give their perception on a scale of 1 to 5. The scale is set as- 5 for 'High positive impact', 4 for 'Low positive impact', 3 for 'No impact', 2 for 'Low negative impact' and 1 for 'High negative impact'. Distribution of responses and percentage of responses for these questions are presented in table A1 and A2 of appendix-D. Mean, mode, median and standard deviation of the responses of these questions are presented in table A3 of appendix-D. Frequency distributions of the responses are demonstrated in pie charts which are presented in appendix-E.

## 4.3 Findings of the questionnaire survey

The outcome of the survey is summarized below under three broad headings:

### 4.3.1 Regarding the impact of PPR 2008 on the project implementation time

Following 4 questions have been asked on total project implementation time :

***Question: How much does inclusion of 'Tender Validity Period' in PPR 2008 impact tender processing time?***

In response to this question, 56% respondents have given their opinion that inclusion of 'tender validity period' has 'high positive impact' on tender processing time. 36% respondents perceive as 'low positive impact', 8% perceive as 'no impact'. No respondent perceives as 'low negative impact' or 'high negative impact'.

***Question: There is a clear guideline for allowable time at different stages of tender processing. How much does this guideline impact 'tender processing time'?***

The perception of the respondents are very consistent for this question. 48% respondents believe that guideline for tender processing time has 'low positive impact' whereas 44% believe

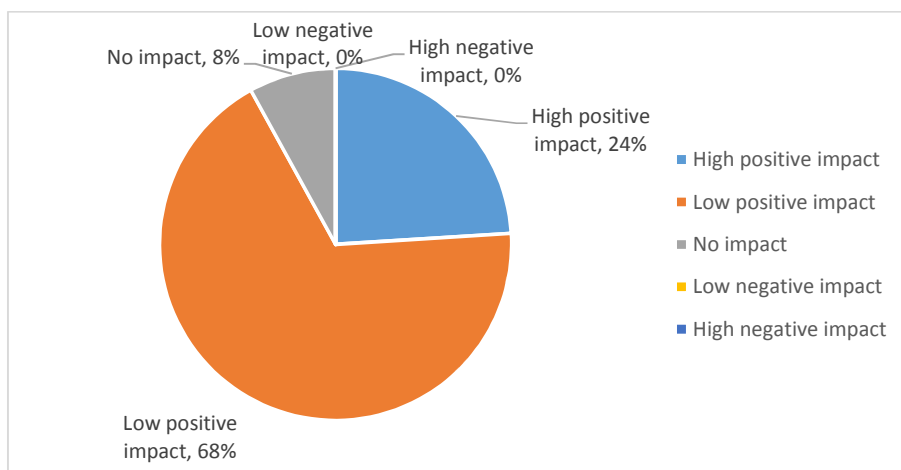
as 'high positive impact'. According to 8%, there is 'no impact'. No respondent however, perceives as 'low negative impact' or 'high negative impact'.

**Question: Provision of 'liquidated damage' is incorporated in PPR 2008 for implementing project in time. How much, does this rule impact project implementation time?**

In response to the question, 68% respondents believe that inclusion of 'liquidated damage' has 'low positive impact' on project implementation time. Whereas 20% believe 'high positive impact', 12% believe 'no impact'. No respondent perceives as 'low negative impact' or 'high negative impact'.

**Question: How much PPR 2008, as a whole, impact total project implementation time?**

This is the main question that has been asked to get the perception of respondents regarding the impact of PPR 2008 on total project implementation time. For this question, most of the respondents perceive that PPR 2008 has positive impact on the total project implementation time. 68% respondents believe that PPR 2008, as a whole, has 'low positive impact' on project implementation time. Whereas 24% believe 'high positive impact', 8% believe 'no impact'. No respondent perceives as 'low negative impact' or 'high negative impact'. The responses are presented in the following pie chart.



From the responses of these four questions, it seems that guideline for tender processing time, inclusion of 'tender validity period' and 'liquidated damage' clause have significant positive impact on the total procurement time of construction projects. 92% respondents have given opinion that PPR 2008, as a whole, has positive impact on the total procurement time. The responses of all the four questions are demonstrated in pie chart in appendix-E.

#### 4.3.2 Regarding the impact of PPR 2008 on the quality

Following 4 questions have been asked to get the perception on impact of PPR 2008 on quality of works :

**Question: How much does taking 'performance security' impact quality of works?**

In response to the question, 44% respondents believe that inclusion of 'performance security' has 'low positive impact' on quality of works. Whereas 32% believe 'no impact', 20% believe 'high positive impact', 4% believe 'low negative impact'. No respondent has mentioned 'high negative impact'.

**Question: Rule 29(3) of PPR 2008 states: "There shall be no reference, in technical specification of Goods, to a particular trade mark or trade name, patent, design or type, named country of origin, producer or service Supplier". How much does this rule impact achieving quality?**

For this question, most of the respondents perceive that this Sub-Rule has impacted negatively on the quality of materials for works. 68% respondents perceive that inclusion of this Rule has 'high negative impact' on quality of works. Whereas 24% believe 'low negative impact', 8% believe 'no impact'. No respondent perceives 'high positive impact' or 'low positive impact'.

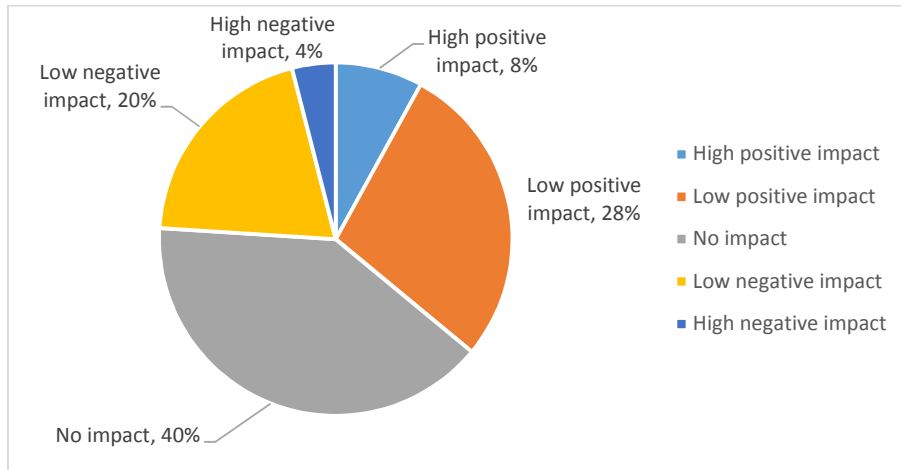
**Question: Sub-Rule (7) under Rule 39 states: "The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Contract; and the Defects Liability Period shall be extended for as long as Defects remain to be corrected". How much does this rule impact achieving quality?**

In response to this question, 48% respondents believe that inclusion of this Sub-Rule has 'low positive impact' on quality of works. 28% believe 'high positive impact', 24% believe 'no impact'. However, no respondent perceives 'low negative impact' or 'high negative impact'.

**Question: How much PPR 2008, as a whole, impact quality of works?**

This is the main question that has been asked to get the perception of respondents regarding the impact of PPR 2008 on the quality of work. The perception of the respondents are very

mixed for this question. 40% respondents perceive that the PPR 2008, as a whole, has 'no impact' on quality of works. 28% perceive as 'low positive impact', 20% as 'low negative impact', 4% as 'high negative impact' and 8% as 'high positive impact'. The responses are presented in the following pie chart.



From the responses of these four questions, it seems that Rules regarding 'performance security', 'defect liability period' have positive impact on the quality of works. However, Sub-Rule 29(3) of PPR 2008 has significant negative impact on quality of works. 64% respondents have given opinion that PPR 2008, as a whole, has not any positive impact on the quality of works. The responses of all the four questions are demonstrated in pie chart in appendix-E.

### 4.3.3 Regarding the impact of PPR 2008 on the project cost

Following 4 questions have been asked for the impact of PPR 2008 on total project cost :

**Question: How much, do you think, adopting PPR 2008 impacts tender processing cost of a procurment?**

The perception of the respondents are somewhat negative for this question. 68% respondents perceive that PPR 2008 has 'low negative impact' on tender processing cost, whereas 16% perceive as 'no impact', 12% perceive as 'high negative impact', 4% as 'low positive impact'. However no respondent perceives as 'high positive impact'.

**Question: Sub-Rule (9) under Rule 38 states: “The price of a contract shall usually be fixed in which case the unit prices may not be modified in response to changes in economic or commercial conditions except when a Contract for Works has a provision for price adjustment”. How much does this rule impact project cost?**

The perception of the respondents are very mixed for this question. 48% respondents perceive that the inclusion of this Sub-Rule has ‘no impact’ on the project cost, whereas 20% perceive as ‘low positive impact’, 20% as ‘low negative impact’, 8% perceive as ‘high positive impact’ and 4% as ‘high negative impact’.

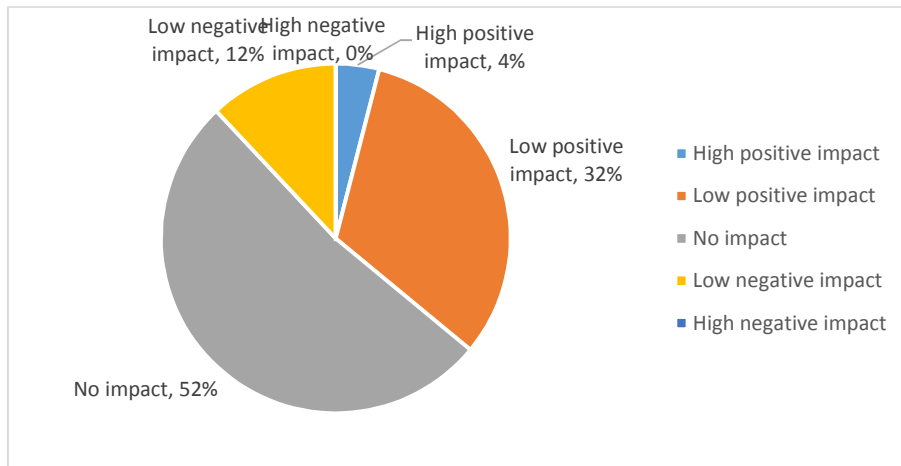
**Question: Sub-Rule (2) under Rule 28 states: “On completion of the whole Works, half the total amount retained shall be repaid to the Contractor and the remaining amount may also be paid to the Contractor if an unconditional Bank guarantee is furnished for that remaining amount”. How much does this rule impact project cost?**

The perception of the respondents are also somewhat mixed for this question. 52% respondents perceive that the inclusion of this Sub-Rule has ‘no impact’ on project cost. Whereas 32% perceive as ‘low positive impact’, 12% as ‘low negative impact’, 4% perceive as ‘high positive impact’. However, no respondent believes inclusion of this Sub-Rule has ‘high negative impact’.

**Question: How much does PPR 2008, as a whole, impact total project cost?**

This is the main question that has been asked to get the perception of the respondents regarding the impact of PPR 2008 on the total project cost. For this question, 40% respondents perceive that PPR 2008, as a whole, has ‘low positive impact’ on the project cost, whereas 40% perceive as ‘no impact’, 4% perceive as ‘high positive impact’, 12% perceive as ‘low negative impact’ and 4% perceive as ‘high negative impact’. The responses are presented in the following pie chart.





From the responses of these four questions, it seems that majority of respondents have given view that Rules regarding fixed price contract, retention money has no positive impact on the total procurement cost of construction projects. On the other hand, most of the respondents have perceived that tender processing cost increases due to PPR 2008. However, 44% respondents have given opinion that PPR 2008 as a whole has positive impact on the total procurement cost. Detailed charts are available in appendix-E.

#### 4.4 Analysis of findings from the questionnaire survey

##### 4.4.1 On the project implementation time

From the responses it seems that there is a strong positive correlation between the ‘tender validity period’ and ‘tender processing time’. Total 23 out of 25 respondents perceive that inclusion of ‘tender validity period’ has reduced tender processing time. The standard deviation of the responses is 0.64. For the question on guideline of tender processing, almost all respondents believe that there is a positive impact of guideline on the tender processing time. Some respondents, however, have argued that though the guideline helps dispose tender quickly but the time table given is not practical and needs modification. The standard deviation of the responses is 0.62. The third question was regarding the impact of ‘liquidated damage’ on the project execution time. It is seen that 88% respondents believe that inclusion of ‘liquidated damage’ clause in the tender document helps reducing execution time of procurement of works. This is an indication that the contractors are motivated to work on time as ‘liquidated damage’ clause is a predetermined loss which has to be incurred for being delay of executing the contract. The standard deviation is 0.56, which is an indication of consistent responses. It is

seen that most of the respondents perceive PPR 2008 has positive impact on reducing total time for procurement of works. The standard deviation is 0.54 which also shows very consistent reply. Thus the survey result indicates that after the introduction of PPR 2008, project implementation time becomes shorter.

#### **4.4.2 On the quality of works**

It has been observed that majority of respondents perceive that taking 'performance security' has positive impact on quality of works. However, the standard deviation of the responses is little bit more, which is 0.8. Some respondents have commented that 'performance security' not only encourage contractors to do quality work but also motivates them to complete the contract on time. Some respondents, however, have strongly opposed this provision of taking performance security and have argued that the financial cost of the tied up money has negatively influenced the contract price of the procurement. Almost all respondents believe that this Sub-Rule 29(3) has negatively impacted quality of works. The standard deviation of the responses is 0.63 which indicates quite consistent reply. Most of the respondents have strongly opposed the inclusion of this Sub-Rule 29(3) and have argued that due to this Sub-Rule, quality material is very difficult to procure. Some respondents have recommended to modify this Sub-Rule in such a way that there must be provision to procure renowned branded product by taking approval from competent authority in the special case. Among the respondents, 76% perceive that the Sub-Rule (7) under Rule 39 has impacted positively to get quality of works. Due to this Sub-Rule, the contractors are motivated to do quality work, because during the defect liability period if any defect is identified, they will be bound to rectify the defects. The last question on this issue is set to get the real perception of respondents for the impact of PPR 2008 on the quality of works. For this question, survey reveals a mix perception with 40% perceive PPR 2008 has no impact on quality of works ; 36% respondents perceive PPR 2008 has positive impact on quality of works whereas 24% respondents perceive that PPR 2008 has negative impact of quality of works. The standard deviation is 0.97 which indicates inconsistency of the responses. The responses from the survey reveal that quality issue has not properly addressed in PPR 2008.

#### **4.4.3 On the total project cost**

Majority of the respondents perceive that PPR 2008 has impacted negatively on tender processing cost, which means that tender processing cost has increased after introduction of PPR 2008. Some respondents, however, argue that the cost of tender processing has no significant effect on the total cost of procurement. Almost half of the respondents believe that

the Sub-Rule 38(9) has no impact on the project cost. The standard deviation is high for this question which is about 0.87. Most of the respondents argue that though fixed price contract has not any significant effect on the contract price, it is less risky for the procuring entity. Some respondents have commented that the risk of project cost overrun is minimized by this Sub-Rule. The next question on this issue was regarding Sub-Rule (2) under Rule 28. This question actually addressed the impact of refund system of retention money on the project cost. More than half of the respondents perceive that this Sub-Rule has no impact on the contract price. The standard deviation for this question is 0.72. Some respondents have strongly opposed this Sub-Rule stating that the provision of refunding system keeps procuring entity at a more vulnerable position. Some respondents have argued that in most of the cases, it is very difficult to encash unconditional bank guarantee in the case of default. They have cited even some of the litigation consequences of such action. For the question regarding general view of the impact of PPR 2008 on total cost of procurement of works, 44% respondents perceive PPR 2008 has positive impact on reducing total project cost for procurement of works. The standard deviation is 0.87 which means inconsistency of the responses.

## **4.5 Findings and analysis of the interview**

### **4.5.1 Key Informant Interview with senior officers**

Key informant interview has been conducted with few senior officers of the Public Works Department. Most of them have given opinion that before introduction of PPR 2008, there was no legal framework on the procurement. It is a good start that has ensured a uniform procurement system throughout the public sectors of Bangladesh. PPR 2008 has ensured fair competition, it has provided adequate screening facilities for selecting qualified contractors which ensures better quality of construction. A discipline has been developed in the procurement system. They mention, among the 3 issues, PPR 2008 has a significant positive impact on the total procurement time of works, while impact on the quality and on the total procurement cost is questionable. Especially Sub-Rule 29(3) of PPR 2008 has adversely affected the quality issue. Few officers have argued that though using specific brand name or country of origin raises question on equal treatment but sometimes brand name itself is a vital part of specification that ensures quality. They have mentioned that the presence of Sub-Rule 29(3) ensures equal treatment to all producers; however, it demands specialization in specification writing to protect inferior quality product from competing with superior quality product. It is very difficult now to ensure quality as we are lagging in specification writing. That's why they have proposed that Sub-Rule 29(3) needs to be modified. On the other hand, they have mentioned, though it seems that the total cost of procurement of works decreases after

introduction of PPR 2008, but the total cost of ownership increases. For that reason, the real impact of PPR 2008 on the total project cost is also not clear. Few officers have argued that PPR 2008 is good for big procurement, but not suitable for small procurement and repair & maintenance work. They also mention that the inclusion of Tender Evaluation Committee (TEC) members from outside the PE's organization is good for ensuring transparency; however, it creates an extra burden for external members for attending such committee meeting and real contribution to other organization's procurement is not always possible. In most of the cases, only signing of the evaluation report is done by the external members of TEC without true involvement in the evaluation process. Hence, according to them, the main objective of the composition of TEC members is not fulfilled. For that reason, few senior officers have proposed to modify the composition of TEC members and have given opinion of incorporating external members in special type of high value procurements only. One senior officer has mentioned that the Joint Venture system creates problem in project implementation. Another officer argues that PPR 2008 has been introduced without proper preparation. Most of the officers have mentioned that due to non-existence of limit for quoting rate, it is very difficult to complete the work with required quality. Few officers have given opinion that elaborate documentation and huge paper work for each procurement cause delay of procurement processing. and thus valuable time and money are wasted.

#### **4.5.2 Key Informant Interview with contractors**

Key informant interviews have been conducted with few contractors who are presently working in different construction project of Public Works Department. They have been asked to give their views regarding the impact of PPR 2008 on the 3 project parameters. Most of them have given their view that tender processing is quicker now and hence there is a positive impact of PPR 2008 on total procurement time. Most of the contractors have mentioned that due to the availability of inferior quality materials in the market they also face problem with the ultimate quality of construction work. They have proposed the necessity of proper inspection by the relevant government agencies for controlling quality of materials available in the market. They think that PPR 2008 has negative impact on quality. They have argued that those who are committed to quality work are facing competitive disadvantages with other group who have no commitment to quality. Hence, during bidding process price war occurs as quality issue is not properly addressed in PPR 2008; the result is low quality work at lower price. They have cited some issue like submitting huge amount of performance security before contract signing creates liquidity problem during actual work. Though there is a provision of submitting bank guarantee against performance security, but the cost of such guarantee is also very high. Moreover, some dishonest contractors, with the help of some dishonest bank officers, collect fake bank guarantee which creates a competitive inequality with honest contractors. In addition,

the procuring entity has to spend more time now on this issue and hence tender disposal process becomes lengthy. Most of the contractors have mentioned that they have to incur 'liquidated damage' in case of their fault. However, the compensation event, in the case of procuring entity's fault, is not entertained. Few contractors have given their view against the traditional fixed price contract and have proposed price adjustment clauses to be incorporated in all procurement. Due to fixed price contract, they are vulnerable to price fluctuation of engineering materials need for construction. They have mentioned that proper flow of fund is also very important for smooth progress of construction work. Finally, they have given their view against submission of huge number of documents with each tender. They have to collect experience certificate from different agencies. According to them, the time and cost involved in collecting and submitting these documents are wasted.

#### **4.6 Summary of key findings**

Both questionnaire survey and interviews reveal that PPR 2008 has significant positive impact on total procurement time of construction projects. For the quality of works, survey observes that quality has not improved due to PPR 2008; interview reveals that PPR 2008 has negative impact on controlling quality of materials. On the other hand, survey reveals that PPR 2008 has slightly reduced total cost of procurement of works; whereas interview with senior officers observe that perhaps the cost of procurement of works decreases but the total cost of ownership increases hence the impact of PPR 2008 on total cost of procurement is questionable; interview with contractors reveal that total cost of procurement has decreased at the cost of quality.

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# CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Conclusion

Questionnaire survey and information from various sources over the impact of PPA-2006 & PPR 2008 on construction activities reveals to attain such conclusions some of which are:

- i) PPA-2006 & PPR 2008 have positive impact on the procurement of works in respect of total time required in its execution. In fact the rules helped in reducing time for processing of tenders / bids and also its completion.
- ii) PPA-2006 & PPR 2008 have very little in improving quality of construction works. It has rather caused in many occasions, deteriorating the quality of works.
- iii) The promulgation of the rules & regulations has yet to yield in any positive result on the total cost of procurement. In many cases quality has been shadowed for having cost reduction.

PPA-2006 & PPR 2008 have brought a guide line in procurement of goods, works and services for nation as a whole. All Government & Government owned organizations have to follow these rules without any deviation. This study aimed on the basic variables of construction projects. The basic aspects are tenure of time required, quality to be achieved and cost involved. Most likely a project be completed with due quality, time & cost. Though in many cases all these three do not happen in equal frequency. Depending upon the character of individual project, one or two variables needs to be adjusted. By studying the PPA-2006 & PPR 2008 it has been noticed that there are such provisions which help reduction the tenure of time for the completion of a construction project. There are some provisions in the rules which are not congenial for having due quality. Tender processing time have been minimized by spelling validity period of tenders. Spelling out of Tender approval procedure and provision of liquidated damage have helped in timely works completion. Since the PPA & PPR do not permit in tenders to name the origin of procured goods, so it, in many cases, prevents to procure a quality output. The application of the rules for all procurements, of all valuation, brings additional cost to many procurements. But it brings cost reduction by allowing equal opportunity to all. Difference of opinion between vendors & the authority be resolved in quick pace which helps positively on the overall cost of projects. With the implementation of the rules under consideration contract management has become easier. This research reveals a mix of positive & negative result. The negative observations might be addressed through trial & error method in days ahead.

## 5.2 Recommendations

On careful study of PPA-2006 & PPR 2008, **It has been realized that it brought many positive changes in the procurement of construction process.** More positive benefits can be obtained out of the rules on adapting in befitting manner of under mentioned recommendations:-

- In assessing the time limit for the completion of any construction project pragmatic procedure should be adapted. The situation of Force majeure should be taken into consideration. Country's political situation, since contributes a lot, so it should also be taken into cognizance. The Gantt chart & CPM be taken into consideration. In addition the significance of the methods be allowed to understand to the respective bidders/ tenderers.
- Detailed Site plan. Soil testing be done at the primary stage of a project. Before floating of tenders detailed drawings of Architectural, Structural, Artistic, Sculptural, Sanitary water supply, waste disposal system be done and based on it cost estimates, according to sub-heads be determined.
- For making timely payment to the contractor, its smooth flow is required to be ensured. For this a mechanism is required to be developed.
- Liquidity damage clause be applied vigorously. To avert, periodic meeting between contractor and the authority should be held.

From the study it has also been revealed that the PPA & PPR is silent on quality of procurement. Since quality is the prime importance, so clauses related to the quality be included in the rules to ensure quality. For ensuring quality of works it is suggested that:-

- To avoid front loading, tenders for works be allowed to have percentage above / below/ at per over of engineer's estimate. For controlling / approval of engineer's estimate the procedure laid down in CPWD code with its up to date amendments be taken into cognizance.
- For having better quality of machinery / equipment procurement (e.g. Medical, industrial etc.) brand name / country of origin/ manufacturing company's equivalency be allowed to mention.
- Retention money be refunded only after the expiry of its period. Defect remedy & maintenances be ensured in this process.

It is also seen from the study that PPA-2006 & PPR 2008 has got little on cost aspects for which some proposal are being placed here with:-

- Specifications for various items be drawn according to nature, requirement, usages etc of the construction. It should always be kept in mind that, during the progress of construction no addition or alteration be happened (any change in given specification cause many complications in respect of unit rate, time frame etc.).
- During the process of tender evaluation it is to be looked seriously so that it be done on the MEAT (Most Economically Advantageous Tender) rather than low cost selection. Total cost of ownership (TCO) to be considered rather than simply quoted price in the evaluation criteria.
- The provision of 'Negotiation' be incorporated again.
- The necessity of submitting huge number of documents with every tender, irrespective of value of procurement, to be changed. A national web portal may be developed where such documents of eligible contractors will be available in electronic form.
- Training on procurement along with its rules & regulation be provided right from field level to high level officers [this provisions be extended to all Departments as well as Govt. organization]. Tender approval authorities as well as contractors should also be accorded with such kind of training.
- The activities of BSTI to be strengthened for controlling the quality of raw materials in the market. The necessity of inclusion of external members in the TEC to be limited to big procurement only. Relevant Rules to be modified in this regard.
- PPR 2008 should be applied to the procurement of big construction projects only. For small procurement and emergency repair & maintenance work, more simplified method to be adopted. For small value procurement, tender documents to be simplified.
- The necessity of inclusion of external members in the TEC to be limited to big procurement only.
- Relevant Rules to be modified in this regard.
- Strong security system needed in issuing 'Bank Guarantee'(s) by different banks so that competent authority recognize easily its genuines.
- e-procurement system to be implemented in PWD. This also be done in all Public organizations.



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## Appendix-A: Key terms in PPR 2008

Definition of key terms of PPR 2008 are presented here:

- 1) **"Contractor"** means a Person under contract with a Procuring Entity for the execution of any Works under the Act.
- 2) **"CPTU"** means the Central Procurement Technical Unit, established by the in the Implementation Monitoring and Evaluation Division of the Ministry of Planning, for carrying out the purposes of the Act and these Rules.
- 3) **"Defect"** is any part of the Works not completed in accordance with the Contract.
- 4) **"Defects Correction Certificate"** is the certificate issued by Project Manager upon correction of defects by the Contractor.
- 5) **"Defects Liability Period"** is the period named in the Contract and calculated from the Completion Date.
- 6) **"Delegated Procurement"** means a procurement undertaken by a specialized Procuring Entity on behalf of a Ministry, Division, Department or Directorate when the beneficiary entity delegates the task to such Procuring Entity.
- 7) **"Head of the Procuring Entity"** means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act.
- 8) **"Intended Completion Date"** is the date on which it is intended that the Contractor shall complete the Works as specified in the Contract and may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- 9) **"Procurement"** means the purchasing or hiring of Goods, or acquisition of Goods through purchasing and hiring, and the execution of Works and performance of Services by any contractual means.
- 10) **"Procuring Entity"** means a Procuring Entity having administrative and financial powers to undertake Procurement of Goods, Works or Services using public funds.
- 11) **"Project Manager"** is the person named in the Contract or any other competent person appointed by the Procuring Entity and notified to the Contractor who is responsible for supervising the execution of the Works and administering the Contract.
- 12) **"Public Funds"** means any funds allocated to a Procuring Entity under Government budget, or loan, grants and credits placed at the disposal of a Procuring Entity through the Government by the development partners or foreign states or organizations.
- 13) **"Public Procurement"** means Procurement using public funds.
- 14) **"Tender or Proposal"**, depending on the context, means a Tender or a Proposal submitted by a Tenderer or a Consultant for delivery of Goods, Works or Services to a Procuring Entity in response to an Invitation for Tender or a Request for Proposal; and for the purposes of the Act, Tender also includes quotation.

15) **"Works"** means all Works associated with the construction, reconstruction, site preparation, demolition, repair, maintenance or renovation of railways, roads, highways or a building, an infrastructure or structure or an installation or any construction work relating to excavation, installation of equipment and materials, decoration, as well as physical Services ancillary to Works, if the value of those Services does not exceed that of the Works themselves.

## **Appendix-B: Selected Rules and Sub-rules of PPR 2008**

Following Rules and Sub-rules of PPR 2008 are related to the time, quality and cost issues of public procurement. These are presented here as cited in PPR 2008.

### **Sub-Rule 4(4) :**

Tender Documents, where appropriate, shall define the tests, standards and methods that shall be used to determine the compliance of the Goods or equipment to be delivered or Works to be performed with technical specifications.

### **Sub-Rule 4 (5) :**

Technical specifications shall be prepared in a non-restrictive manner so that a fair and open competition is possible and shall be consistent with drawings included in the Tender Documents.

### **Rule-19 :**

Determination of Validities

(1) The validity period shall be determined depending on the complexity of the Tender or Proposal and the time needed for its evaluation and approval and shall be within the limits specified in Schedule II .

(2) Notwithstanding anything contained in Sub-Rule (1), shorter or longer periods may be authorized by the Head of the Procuring Entity or an officer authorized by him or her to suit the requirements of a particular Procurement activity.

### **Sub-Rule-22(1) :**

To discourage the submission of Tenders with ill motive, a Procuring Entity may include in the Tender Documents a condition that Tenders must be accompanied by a security in form of, at Tenderer's option, a bank draft, pay order, or bank guarantee using the standard format attached to the Tender documents, issued by a scheduled bank of Bangladesh.

### **Rule-25 :**

Forfeiture of Tender Security

(1) A Tender security shall be forfeited if the Tenderer-

(a) withdraws his Tender after the opening of Tenders but within the validity of the Tender security ; or

(b) refuses to accept a Notification of Award ; or

(c) fails to furnish performance security, if so required; or

(d) refuses to sign the Contract; or

(e) does not accept the correction of the Tender amount following the correction of arithmetic errors pursuant to Rule 98 (11).

**Rule-27 :**

Performance Security

(1) A Performance Security shall be furnished by the successful Tenderer in the amount specified in the TDS following the threshold specified in Schedule II.

(2) The Procuring Entity may increase the amount of the Performance Security above the amounts specified in the Schedule II , if the TEC considers the Tender unbalanced as a result of front loading.

(3) The Performance Security shall be in the form of a Bank draft, pay order or a Bank Guarantee, as specified in Schedule II, issued by a bank acceptable to the Procuring Entity.

(4) In the case of international procurement , the Performance Security shall be in the form of a Bank Guarantee as specified in the Tender Document shall be issued by an internationally reputable bank and it shall have correspondent bank located in Bangladesh, to make it enforceable.

(5) A Performance Security shall be required to be valid until a date twenty-eight (28) days from the intended completion date if there is no condition for deduction of retention money .

(6) If the intended completion date is to be extended, validity of the Performance Security shall be extended for the period until twenty-eight (28) days from the new intended completion date

(7) The Performance Security shall be replaced by a new security covering (fifty percent) 50% amount of the Performance Security to cover the defect liability period if condition for deduction of retention money has not been applied.

(8) The amount of new Security to be provided under Sub-Rule (7) shall be calculated based on the final contract value.

(9) Furnishing Performance Security shall not be mandatory in the case of Procurement of spare parts from the original manufacturer or his sole agent.

**Rule-28 :**

Retention

(1) Retention money at a percentage as specified in Schedule II will be deductible from each bill due to a Contractor until completion of the whole Works or delivery.

(2) On completion of the whole Works, half the total amount retained shall be repaid to the Contractor and the remaining amount may also be paid to the Contractor if an unconditional Bank guarantee is furnished for that remaining amount .

(3) The remaining amount or the Bank guarantee, under Sub-Rule (2), shall be returned, within the period specified in schedule II , after issuance of all Defects Correction Certificate under Rule 39(29) by the Project Manager or any other appropriate Authority .

(4) Deduction of retention money shall not be applied to small Works Contracts if no advance payment has been made to the Contractor and in such case the provisions of Sub-Rule (7) and (8) of Rule 27 shall be applied.

**Rule-29 :**

Procedure for Preparation of Technical Specifications of Goods, Etc.

(1) A Procuring Entity shall at the time of describing requirements in respect of a particular object of Procurement provide, inter alia, the following information, namely

- (a) name or description of the Goods, Works or Services to be procured;
- (b) quality of Goods, Works or Services;
- (c) required performance Standards and life span;
- (d) safety Standards and limits ;
- (e) symbols, terminology to be used in packaging, marking and labeling of the Goods to be procured;
- (f) processes and methods to be used in the production of the Goods to be procured, where applicable; and
- (g) test procedure, if any, for conformity assessment of Goods .

(2) Technical Specifications prepared by Procuring Entities shall, where appropriate, be-

- (a) expressed in terms of performance or output requirements, rather than specifications linked directly to design or descriptive characteristics which may tend to limit competition;
- (b) described in clear terms on the basis of international standards ,if any, or national or authorized national standards or code or generic name .

(3) There shall be no reference, in technical specification of Goods, to a particular trade mark or trade name, patent, design or type, named country of origin, producer or service Supplier

(4) Notwithstanding any thing contained in Sub-Rule (3), if a Procuring Entity does not possess adequate technical expertise for preparing generalized technical specifications to make the specifications fully understandable to Tenderers it can make a reference to a particular branded product, but in such case shall add the words “or similar or equivalent” to the specification.

(5) Procuring Entities shall, where possible, prepare the specifications in close co-operation with the concerned user or beneficiary of the Goods or Works or Services, and follow, among others, the Standards approved or published by -

- (a) the International Organization for Standardization (ISO);
- (b) the International Electro technical Commission (IEC); and
- (c) Standards determined by Bangladesh Standard and Testing Institute (BSTI) or any other national or international institute.

(6) Procuring Entities, in consultation with manufacturers, may standardize specifications for commonly used Goods, such as paper, office equipment and other consumables which are repetitively purchased, and publish them on their website.

**Sub-Rule 38(3) :**

The Procuring Entity shall ensure that Goods, Works or Services to be procured conform to the technical requirements set forth in the procurement Contract, and for such purpose, the Procuring Entity may establish inspection and testing facilities, form inspection teams, enter into arrangements for the joint or collective use of laboratories and inspection and testing facilities, and contract with others for inspection or testing work as needed.

**Sub-Rule 38(5) :**

Project management may require a review of the design in addition to the supervision of construction from inception to completion and handing over for the purpose of controlling time, cost and quality as well as fulfilling contractual obligations.

**Sub-Rule 38 (9) :**

The price of a contract shall usually be fixed in which case the unit prices may not be modified in response to changes in economic or commercial conditions except when a Contract for Works has a provision for price adjustment.

**Sub-Rule 38(10) :**

If the Contract has a provision for price adjustment, it shall stipulate the conditions, such as increases in the cost of materials, labour, and energy, in which price adjustment would be permitted, the formulas and indices to be referred to in order to determine whether economic or commercial conditions have changed to a significant degree to justify a price adjustment and to identify the amount of increase, the frequency with which price adjustments may be implemented, and the procedures to be followed.

**Sub-Rule 38(11) :**

An increase in the Schedule of Requirement for Goods, Bill of Quantities for Works and scope of work for Services exceeding the permissible percentage of the initial contract price shall require either a new Procurement proceeding or justification, if appropriate, as Direct or Single Source Procurement.

**Sub-Rule 38(14) :**

The Procuring Entity shall take follow-up steps as mentioned below in regard to payment of those liabilities for which the supplier or contractor shall be liable for payment of an agreed sum as specified in the Particular Conditions of Contract , for the cause of delay in the performance due under the contract such as -



- (a) recovery of the agreed sum to be paid per time-unit of delay;
- (b) recovery of the amount due under the liquidated damages;
- (c) not relieving the supplier or contractor of its contractual obligations by virtue of payment under the liquidated damages.

**Sub-Rule 39(1) :**

For the purpose of controlling time, cost and quality, the Project Manager shall follow up the Work Programme and ensure that within the time stated in the contract -

- (a) the Contractor submits to the Project Manager for approval of a Programme showing the general methods, arrangements, order, and timing for all the activities in the Works;
- (b) the Contractor submits to the Project Manager for approval of an updated Programme at specified intervals, being not longer than the period stated in the contract conditions; and
- (c) the Contractor provides the Project Manager with an updated cash flow forecast when updating the Programme .

**Sub-Rule 39(2) :**

The Project Manager may withhold any payment certificates under the terms of the contract until the Works Programme has been submitted under Sub-Rule (1). .

**Sub-Rule 39(3) :**

The Procuring Entity shall extend the Intended Completion Date by the percentage specified in Schedule II, if a Compensation Event occurs or a Variation Order is issued which does not make it possible to complete the Works by the Intended Completion Date without the Contractor incurring additional cost.

**Sub-Rule 39(4) :**

The Procuring Entity shall decide whether and by how much to extend the Intended Completion Date, within the period specified in Schedule II.

**Sub-Rule 39(5) :**

The Project Manager shall check the works executed by the Contractor and notify the Contractor of any Work Defects obligations concerning the quality of the Works.

**Sub-Rule 39(6) :**

The Project Manager may instruct the Contractor to search for a Defect or to uncover and test any work that the Project Manager considers may have a Defect.

**Sub-Rule 39(7) :**

The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Contract; and the Defects Liability Period shall be extended for as long as Defects remain to be corrected.

**Sub-Rule 39(8) :**

If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount so assessed.

**Sub-Rule 39 (27) :**

The Contractor shall be liable to pay liquidated damages at the rate per day or week as specified in the contract for each day of delay from the Intended Completion Date of the original Contract or Extended Completion Date provided that -

- (a) The total amount of liquidated damages shall not exceed the amount defined in the contract.
- (b) The Procuring Entity shall deduct liquidated damages from payments due to the Contractor.

**Sub-Rule 39 (29) :**

The Project Manager shall certify the Final Payment within the period specified in Schedule II, if the payable amount claimed by the Contractor is correct and the corresponding works are completed provided that,

- (a) If it is not, the Project Manager shall issue a Defects Liability Schedule within the period specified in Schedule II, stating the scope of the corrections or additions that are necessary;
- (b) If the corrections or additions scheduled by the Project Manager have been completed, the Project Manager shall issue a Defects Correction Certificate;
- (c) If the Final Account of Works is unsatisfactory even after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

**Sub-Rule 39(32) :** A Certificate of Completion of the Works shall be issued by the Project Manager and the Project Manager shall do so upon deciding that the work is completed under Sub-Rule 29.

## Appendix-C: Questionnaire

### Survey Questionnaire

For official use only

Sl no #

Designation #

Date #

### **Research Topic : Impact of the 'Public Procurement Rules 2008' on the Implementation of Construction Projects- A Case Study on the Public Works Department.**

This is a survey questionnaire for conducting a case study to assess the impact of the 'Public Procurement Rules 2008' on the construction projects. The aim of this research is to assess the impact of PPR 2008 on 'project implementation time', 'quality of work' and 'total project-cost'. It is a part of academic necessity for the Masters Program of 'Procurement & Supply Management' in the Institute of BIGD, BRAC University. Your honest 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. For how long have you been serving in PWD?

less than 10 years

10-15 years

more than 15 years

2. Please tick (✓) mark to the most appropriate option for the following judgmental questions regarding impact of 'Public Procurement Rules 2008' on construction projects:

(Scale:

High positive impact: 5, Low positive impact: 4, No impact: 3,

Low negative impact: 2, High negative impact: 1)

SI no	Questions	High positive impact	Low positive impact	No impact	Low negative impact	High negative impact
i)	How much does inclusion of 'Tender Validity Period' in PPR 2008 impact tender processing time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii).	There is a clear guideline for allowable time at different stages of tender processing. How much does this guideline impact 'tender processing time'?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii)	Provision of 'liquidated damage' is incorporated in PPR 2008 for implementing project in time. How much, does this rule impact project implementation time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv)	How much does PPR 2008, as a whole, impact 'total project implementation time'?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v)	How much does taking 'performance security' impact quality of works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vi).	Rule 29(3) states: "There shall be no reference, in technical specification of Goods, to a particular trade mark or trade name, patent, design or type, named country of origin, producer or service Supplier". How much does this rule impact achieving quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vii)	Sub-Rule (7) under Rule 39 states: "The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Contract; and the Defects Liability Period shall be extended for as long as Defects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	remain to be corrected". How much does this rule impact achieving quality?				
viii)	How much PPR 2008, as a whole, impact 'quality of works'?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ix)	How much, do you think, adopting PPR 2008 impacts influencing tender processing cost of a procurment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
x)	Sub-Rule (9) under Rule 38 states: "The price of a contract shall usually be fixed in which case the unit prices may not be modified in response to changes in economic or commercial conditions except when a Contract for Works has a provision for price adjustment". How much does this rule impacts project cost?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
xi)	Sub-Rule (2) under Rule 28 states: "On completion of the whole Works, half the total amount retained shall be repaid to the Contractor and the remaining amount may also be paid to the Contractor if an unconditional Bank guarantee is furnished for that remaining amount". How much does this rule impact project cost?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
xii)	How much does PPR 2008, as a whole, impact 'total project cost'?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. According to your perception, what are the arguments for positive impact and for negative impact of PPR 2008 for achieving 'quality work', influencing 'total project-cost' and influencing 'project implementation time'.

**a) Arguments for positive impact**

i)

ii)

iii)

iv)

v)

**b) Arguments for negative impact**

i)

ii)

iii)

iv)

v)

Thanks for your cooperation

## Appendix-D: Tables

**Table A1: Distribution of responses for question no 2(i) to 2(xii) of questionnaire**

Question no	Frequency Distribution (Number)					Total Frequency
	High positive impact	Low positive impact	No impact	Low negative impact	High negative impact	
2(i)	14	9	2	0	0	25
2(ii)	11	12	2	0	0	25
2(iii)	5	17	3	0	0	25
2(iv)	6	17	2	0	0	25
2(v)	5	11	8	1	0	25
2(vi)	0	0	2	6	17	25
2(vii)	7	12	6	0	0	25
2(viii)	2	7	10	5	1	25
2(ix)	0	1	4	17	3	25
2(x)	2	5	12	5	1	25
2(xi)	1	8	13	3	0	25
2(xii)	1	10	10	3	1	25

Source: From the data of primary survey

**Table A2: Frequency Distribution in percentage for questions of questionnaire**

Question no	Frequency Distribution (%)					Total %
	High positive impact	Low positive impact	No impact	Low negative impact	High negative impact	
2(i)	56%	36%	8%	0%	0%	100%
2(ii)	44%	48%	8%	0%	0%	100%
2(iii)	20%	68%	12%	0%	0%	100%
2(iv)	24%	68%	8%	0%	0%	100%
2(v)	20%	44%	32%	4%	0%	100%
2(vi)	0%	0%	8%	24%	68%	100%
2(vii)	28%	48%	24%	0%	0%	100%
2(viii)	8%	28%	40%	20%	4%	100%
2(ix)	0%	4%	16%	68%	12%	100%
2(x)	8%	20%	48%	20%	4%	100%
2(xi)	4%	32%	52%	12%	0%	100%
2(xii)	4%	40%	40%	12%	4%	100%

Source: From the data of primary survey



**Table A3: Central Tendency for question 2(i) to 2(xii)**

<b>Question No</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>Standard deviation</b>
2(i)	4.48	5	5	0.64
2(ii)	4.36	4	4	0.62
2(iii)	4.08	4	4	0.56
2(iv)	4.16	4	4	0.54
2(v)	3.8	4	4	0.80
2(vi)	1.4	1	1	0.63
2(vii)	4.04	4	4	0.72
2(viii)	3.16	3	3	0.97
2(ix)	2.12	2	2	0.65
2(x)	3.08	3	3	0.93
2(xi)	3.28	3	3	0.72
2(xii)	3.28	4	4	0.87

Source: From the data of primary survey

## Appendix-E: Pie Charts

Figure E-1

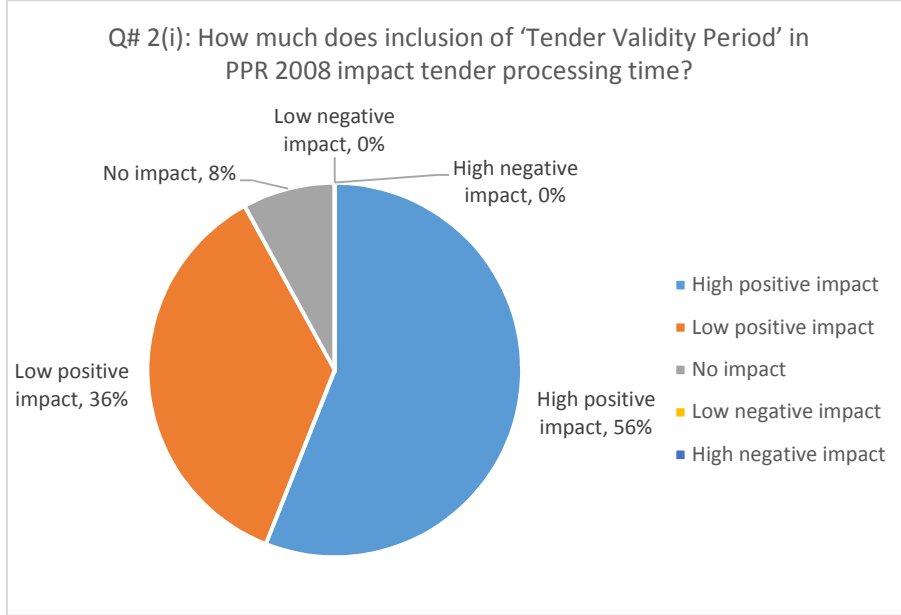
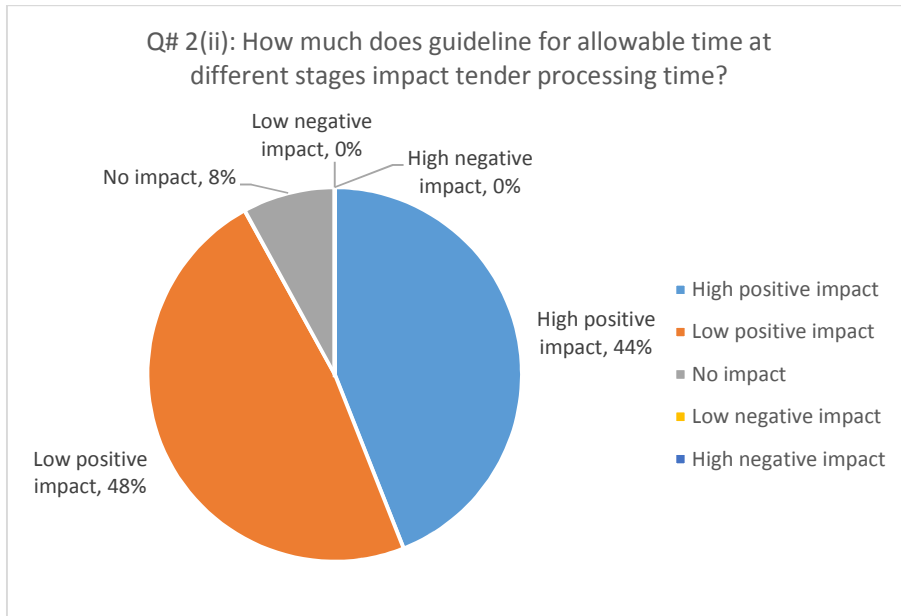
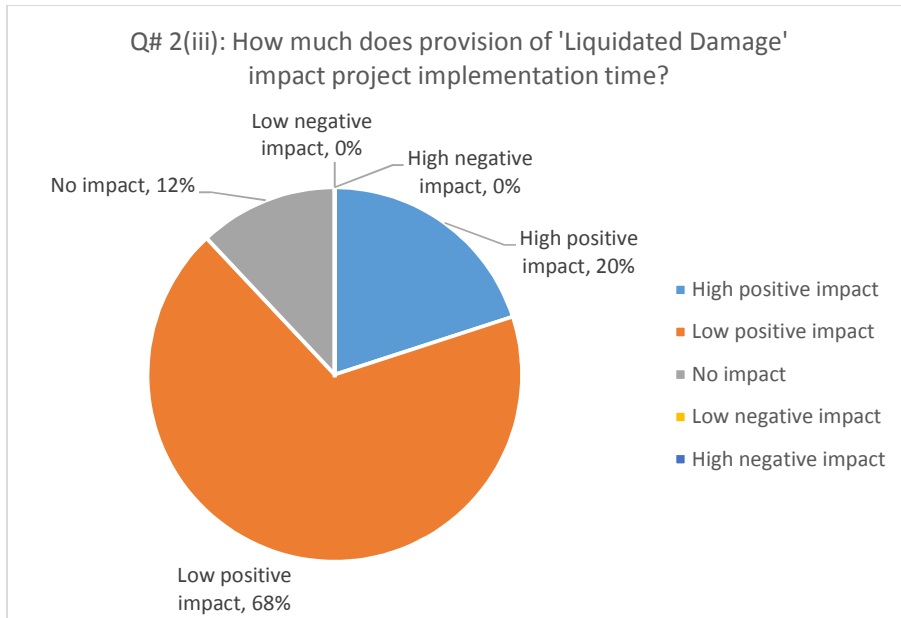


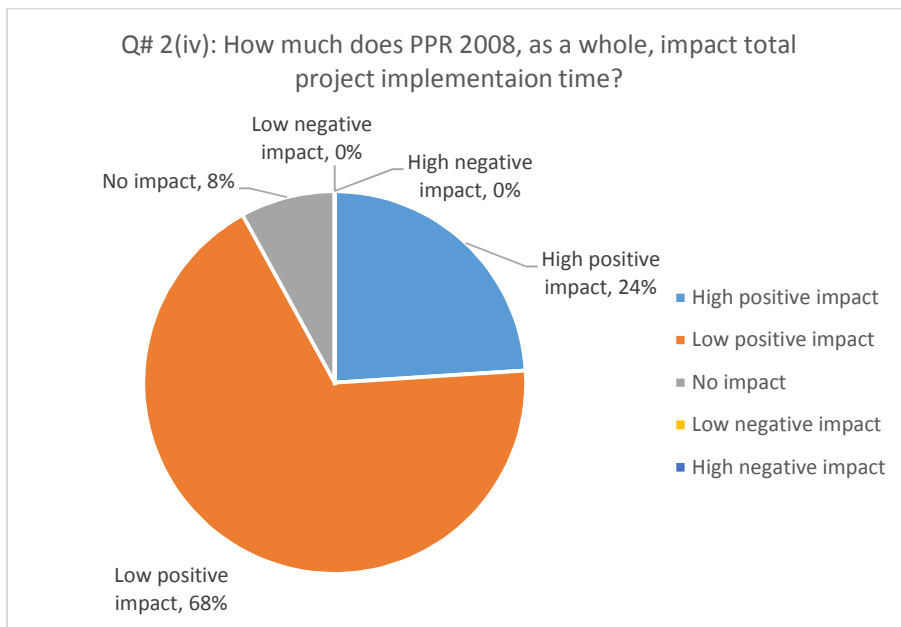
Figure E-2



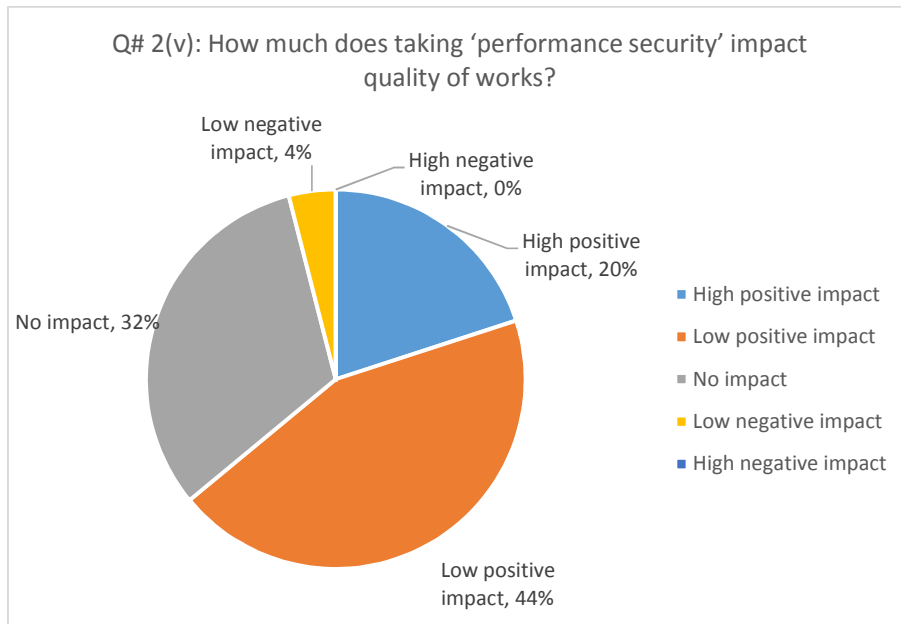
**Figure E-3**



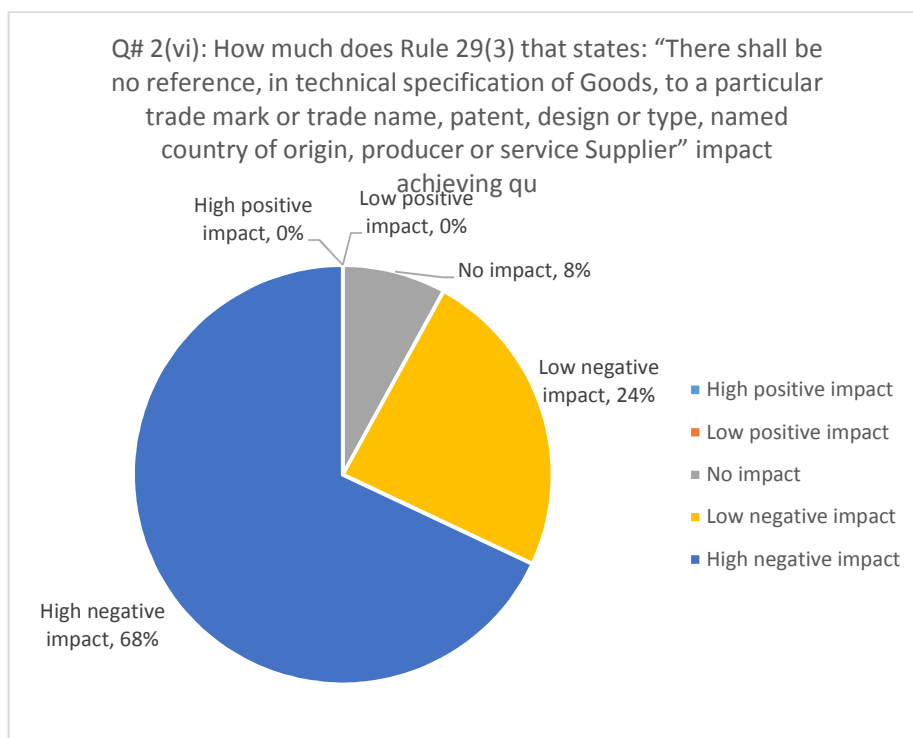
**Figure E-4**



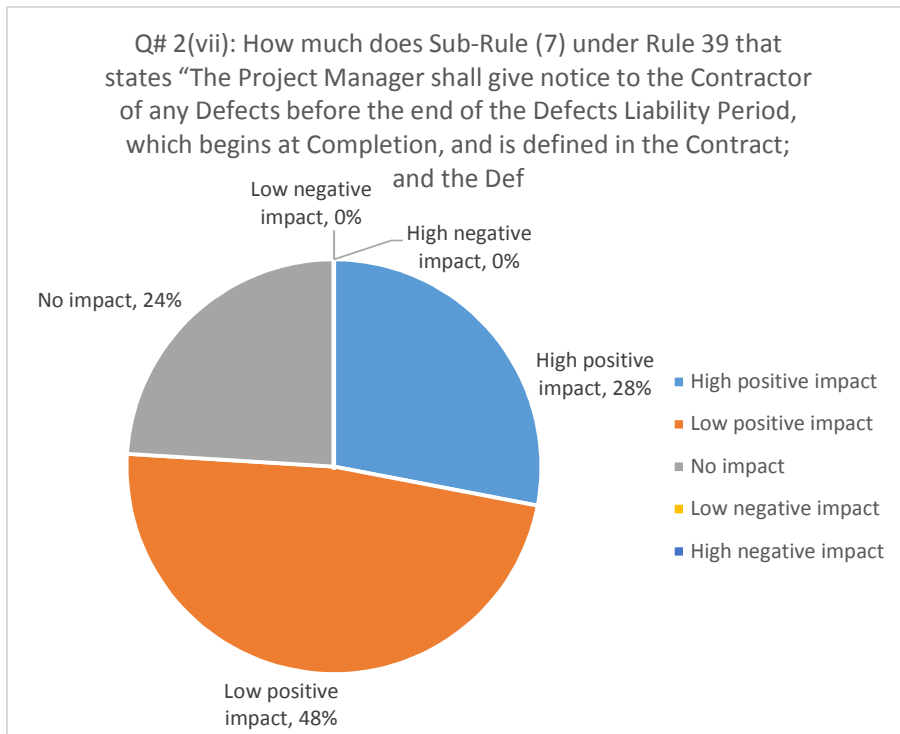
**Figure E-5**



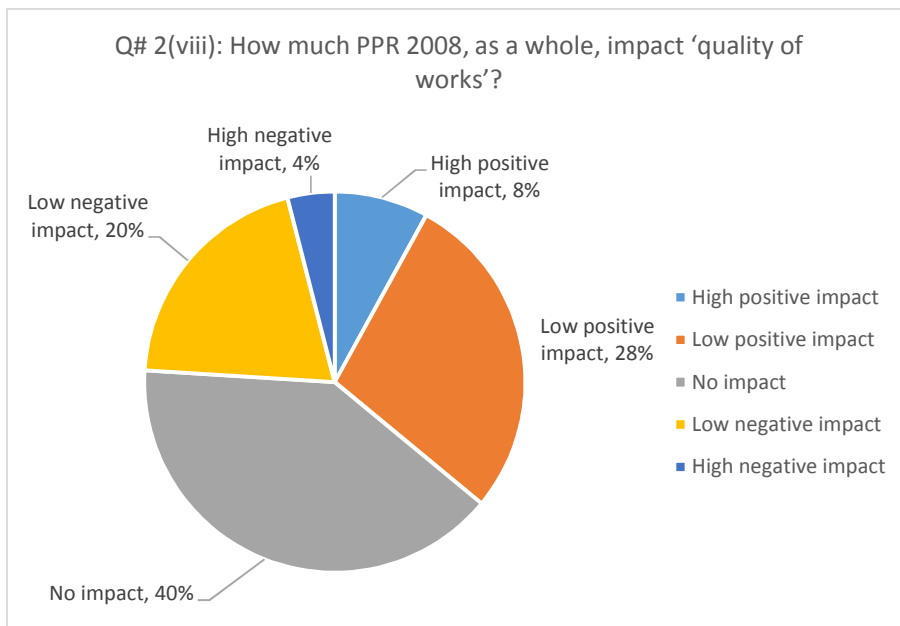
**Figure E-6**



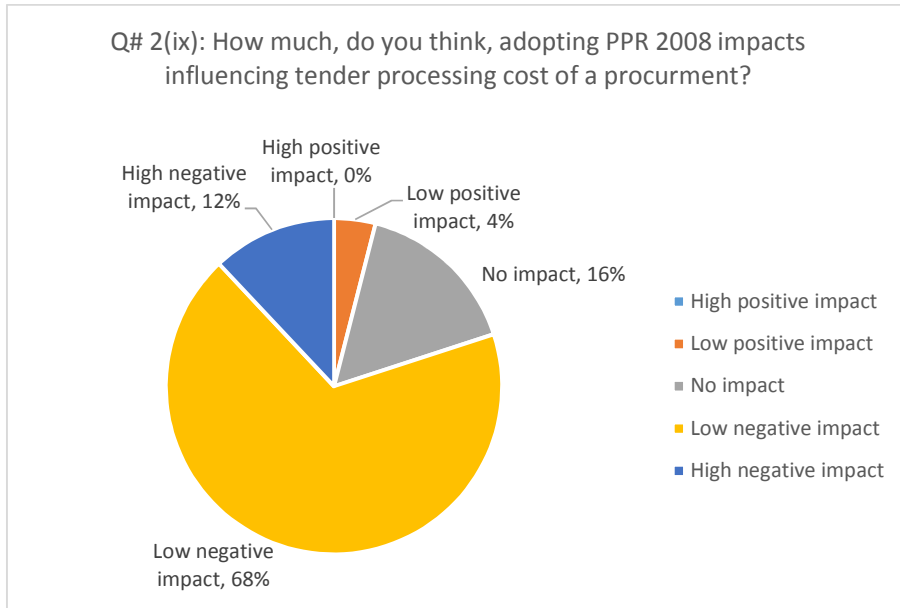
**Figure E-7**



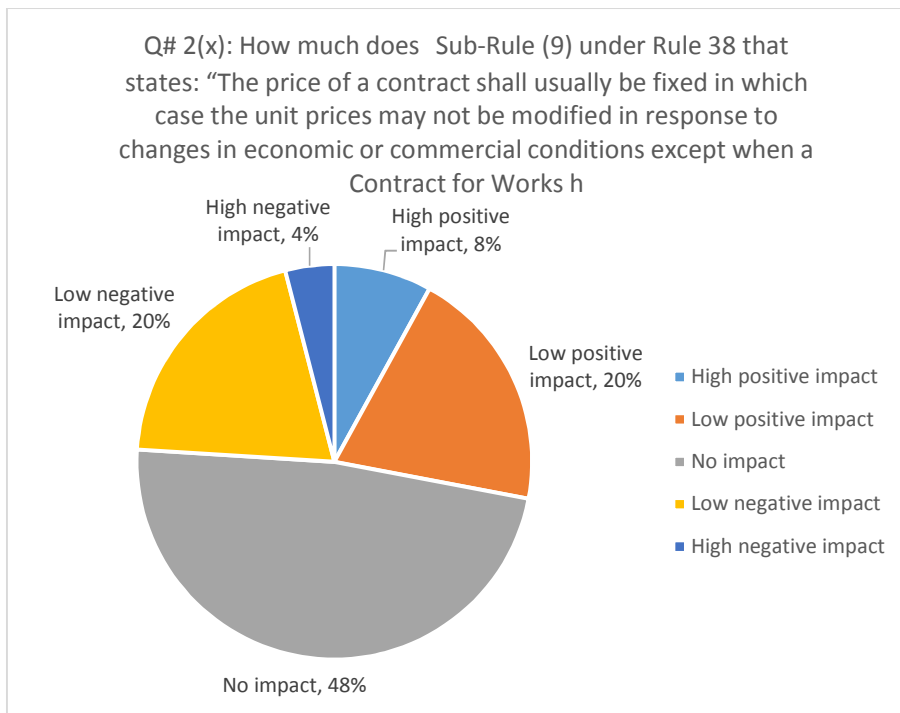
**Figure E-8**



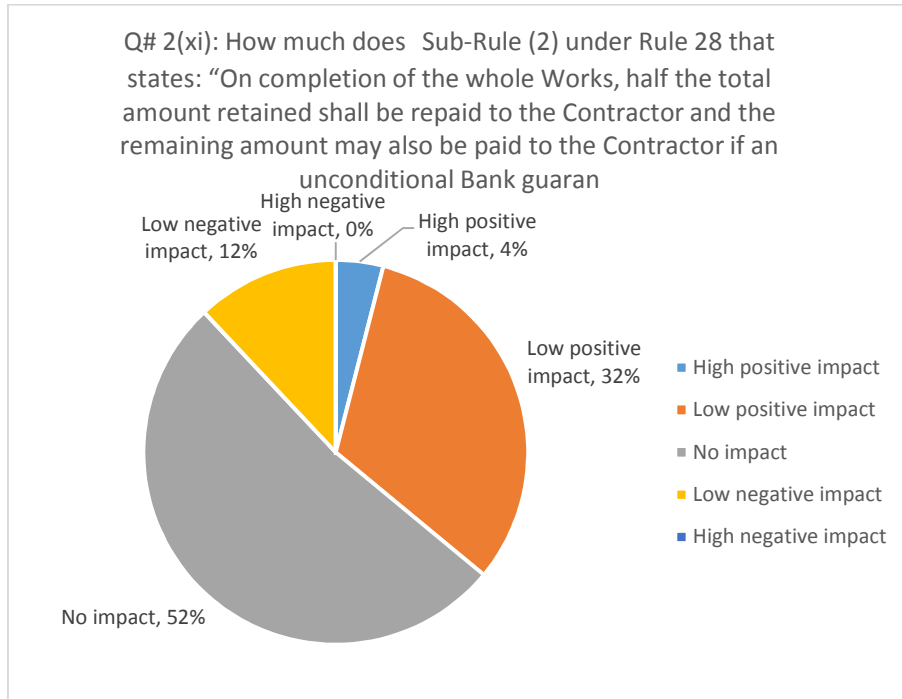
**Figure E-9**



**Figure E-10**



**Figure E-11**



**Figure E-12**

