Ritsumeikan Center for Asia Pacific Studies

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RCAPS Working Paper Series

RWP-13002

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July 26, 2013

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Measuring Effectiveness of Public Expenditures in Bangladesh: A Survey Based Case Study in the Education Sector[1]

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Abstract

Public expenditure in a developing country like Bangladesh has a profound impact on economic growth and poverty reduction. However, for many impediments, such funds are not meeting their pre-designed goals. The reasons are many. To realize these impediments in the Bangladesh economy, in this study, a Public Expenditure Tracking Survey (PETS) has been conducted taking the primary education sub-sector as a test case. To understand the levels of accountability and transparency in expenditure in Bangladesh, a Quantitative Service Delivery Survey (QSDS) was performed along with the PETS. Primary data was gathered with the help of the above surveys and the results showed that the level of accountability, transparency and effectiveness of public expenditures in the said sector is very low.

Introduction

Annual budget account shows that substantial increase in public expenditure with the support of donors and development partners had taken place in Bangladesh since 1990s when the democratic regime had established in the country. After a long period of military rulings, a wide range of pro-poor economic and social policies in an effort to accelerate targeted growth and to reduce poverty were adopted. Since then investment in defense, education, health, energy, rural development and infrastructure became a critical part of various development and non-development expenditures in the country. The nation's expenditure management policies were aimed to translate resources into improvements in all thrust sectors. But there are various questions that come out of the above facts. Does increase in government spending and changes in its composition help or hinder economic growth in Bangladesh? Is an increase in spending on education, health, and physical infrastructures effective in improving human development outcomes and complementing private sector investment; thereby boosting long-term growth given the weakness in public budget administrations? Do poor people really get their proper share from government's spending in welfare sectors like education? What are the potential factors behind the failure of public expenditure management policies in the

[1] This paper is an original research conducted by the author. It will be further upgraded and edited for formal publication. Any kind of citation from any part of the article without proper permission from the author is not allowed.

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country's education sector? Is there any on-the-process leakage and capture in the disbursed funds on the way they reach to the frontline service providers and are they efficient in fulfilling their pre-designed goals? Based upon a case study in the country's education sector, this study makes an effort to answer the above questions. Our hypothesis is checked and verified utilizing our primary data and analysis from the PETS-QSDS survey.

For the beginning of the study basic facts, essences and background theories of the surveys that we are going to use will be reviewed. The rationale for conducting the said surveys in the education sector of Bangladesh is noted in a subsequent section. Then details of the major methodological consideration and data collecting strategies are summarized.

Research Questions

This study seeks to answer the next core question: *has public expenditure in Bangladesh successfully contributed to economic growth and poverty alleviation of the country?* Under this broader one, efforts will be made to answer other relevant questions, such as:

- How efficient are the public expenditure management policies adopted by the Bangladesh government? What is the level of accountability and transparency being maintained in the process of expenditure disbursement and utilization?
- Does the system effectively reduce leakages and captures of funds in delivering provision of key public services?
- Why has public expenditure in key sectors (targeted towards alleviation of mass poverty in Bangladesh) been of little or no impact on the poor group of population?

Objectives

An important objective of this study is to perform a quantitative explanation which is based upon the findings of a joint Public Expenditure Tracking and Quantitative Service Delivery Survey (PETS-QSDS) conducted while considering the primary education sub-sector in Bangladesh as a test case. This study makes efforts to look for common trends and patterns and it also seeks to gather evidences supporting the study's hypothesis through a variety of approaches and methods.

For this study, a survey has been conducted for a sample of about 50 primary schools in four districts (provinces) of Bangladesh. The objective of the survey is to track expenditure flows in Bangladesh education sector using a combination of Public Expenditure Tracking Survey (PETS) and Quantitative Service Delivery Survey (QSDS). Specific objectives include measuring the leakage in school funding, absenteeism of school staffs, completion rates of enrolled students, capture in resources etc. In connection to the study's hypothesis that public expenditure in the key sectors is not efficient enough to improve quality of life of the poor, the objective of the proposed survey also includes a

thorough investigation of the reasons behind the situation. A comparison of official budgetary allocations and actual spending in primary schools is done using various survey instruments.

Hypothesis

National budget data for the last three decades indicates that along with a rise in its quantity the pattern of public expenditure in Bangladesh has undergone some changes. Development expenditure as proportion of GDP has fallen for some key sectors—most importantly manufacturing, energy, water resources and agriculture. It is also notable that Bangladesh government is rapidly reducing spending in directly productive sectors while allocating more resources for the purpose of providing basic public goods such as education and health, infrastructure building and rural development (Wahiuddin, M., 2002). From this point of view, government spending in Bangladesh seems to be *pro-poor* in nature. However, two important issues regarding recent policy reforms for public expenditure should not be ignored. *First*, the quality and effectiveness of public spending in some social sectors are more important than higher allocations if the aim is to translate resources in better social development outcomes. The underlying argument is that the actual effectiveness of public expenditures and their *a priori* rationale are two separate aspects. *Second*, although Bangladesh's performances in reducing poverty and achieving economic and social development outcomes in the last two three decades are not unsatisfactory, a review of the policies and programs related to public expenditure in key sectors—education and health, infrastructure and transport, power and energy, and agriculture and rural development—highlights a number of inefficiencies and structural issues which, if not addressed, will impede further progress on the outcomes. Being specific to the above mentioned issues, the present study intends to examine and test the following hypothesis:

- Public expenditure in Bangladesh does not have positive and significant impact on economic growth and poverty reduction. The major impediments in Bangladesh's public expenditure management are—widespread corruption, lack of accountability and transparency in the system, leakage and capture of funds.

Background Information and Theories for PETS and QSDS

It is important to understand the theoretical and empirical approaches of delivered public services in developing countries prior to conducting any relevant study in this field of research. Literature of Public Economics offers several models that are frequently used to analyze service delivery performances and efficiency. The principal-agent model, which emphasizes the relationships between the politicians or policy makers, frontline service providers (agent) and the people (principal), is one of them. For this model, the State plays as an intermediary agent and it can create a situation where principals cannot easily control and evaluate the role and actions of the decentralized agents (service providers like schools in education sector or hospitals in health services). The model's perspective is that principals/citizens willingly elect officials and delegate State the responsibility to manage and

provide social services. People (principals) are also willing to pay taxes to cover the necessary expenses incurred. Politicians design appropriate budget and offer incentive systems for service provider organizations in fulfilling people's needs (World Bank, 2003)

Figure 1: The Relationship among Various Actors in Education Service Delivery System

Source: World Bank (2003) and Gauthier (2006)

However, agency problem and moral-hazard appear in the process. The wisdom behind the standard moral-hazard and agency problem is that the agent's compensation would link to his/her performance by providing appropriate efforts. In a world with no information asymmetry, citizens would be able to evaluate on their behalf the works done by the agents and/or the government officials. However, in a world with information asymmetry citizens' ability to control agents' behavior is constrained by imperfect information. Hence, gap appears in between them and objectives of various parties do not coincide eventually. This ultimately reaches to a situation of shirking and rent extractions where agents will devote fewer efforts than that was expected by the principals and divert some portion of public funds to their own benefits (Holmström, 1979).

To give an explanation of information asymmetry in public services we follow Dixit (2002) and Besley and Ghatak (2003). According to them, in reality citizens only have the chance to get information about aggregate output of the production process. Having such barriers, it is quite impossible to indicate the responsible person for the situation they can observe. Both agents and citizens cannot get access to proper information about the performances credited by a politician or a government official related to a public program. Moreover, a service provider has imprecise objectives. To give an example, the ultimate objective of a school facility is to serve and promote quality education for students. But it is practically difficult for anybody to measure such a qualitative variable. To be sure, finding good estimates of performance measure in education (or in other words defining quality education) is hard. Hence, in most public service provider organizations with the lack of information about agents' actions and inputs in the production process, the principal has no other means but rely on aggregate measure to evaluate agents' performances and contribution.

Moreover, Besley and Ghatak (2003) claim that in the provision of public services various actors are directly affected because the process involves the presence of multiple principals. The education sector of a country provides a solid example. Here the principals are citizens, employees, school board, the officials of the related ministry and politicians. These different principals might have different views about outcomes and agents' tasks. Dixit (2002) turned a conclusion that the principal wants the agent to make more efforts in achieving goals that he/she prefers more, but there will be inefficiencies and incidence of failure in the case the incentive schemes are designed in such a manner that they are not capable to maximize the combined benefits of all principals.

Furthermore, Radner and Marschak (1972) and Holmström (1982) found a free rider problem in public service organizations that makes public expenditure management difficult since more than one agent are engaged in a joint production process where a central-provincial-local authority plan is followed in most cases to share the responsibilities in decision making. Moral hazard is appeared in the hierarchy and reinforced in the team when individuals try to shield from accepting all the costs associated to their actions.

In line with the above discussion, it is important to achieve accountability between principals and agents in the routes of service delivery system in order to make sure that public services really work for poor people[3]. The framework of multi-level service delivery system advanced by the World Bank (2003) indicates that there are two layers of accountability in the relationship between principals and agents. The first one is termed as the 'short route of accountability' which emphasizes that citizen (principal) has the obligation to make politicians accountable in order to ensure proper service delivery and appropriate incentives for agents' performances. The other one is called 'the long route of accountability' which incorporates the obligations of policy makers in holding provider organizations (agents) accountable for delivering appropriate services. According to Bernard, Reinikka and Svensson (2006), failure in one or both of the above routes may cause inadequate service delivery in developing countries.

[3] Accountability is a principal-agent relationship which comprises some characteristics and can be defined as follows: "…..It (Accountability) is a principal-agent relationship comprising the following characteristics: delegation of responsibility, financing and enforcement on the part of the principal, and effort and information on the part of the agent….." On the other hand, according to a study titled as Citizen Based Service Delivery Monitoring: Research into Current Practices commissioned by the Department of Performance Monitoring and Evaluation (DPME) in South Africa, accountability should be both vertical (across spheres of government) and horizontal (within civil society).

Public Expenditure Tracking Surveys (PETS) in Education

Public Expenditure Tracking Survey (PETS) is a method widely used to understand the flow of various public funds and other resources disbursed for development activities. It tracks the flow of resources within various government organs in order to measure how much of the originally granted funds actually have reached to the targeted clients while they are passing through the service delivery units like schools or hospitals. It aims to improve the allocation criteria and impacts of various public spending on citizens especially the poor groups of a certain country or society. The method tries to identify weaknesses in the country's public expenditure management system and provides information about failure of policy mechanisms that are followed in making decisions about allocation of resources. The tool is very helpful in a sense that it gathers many data from various sources simultaneously. Later these data can act as the basis for our understanding about the fundamental reasons of malfunctions in service delivery systems or causes of policy failure in a certain economic sector related to government led services. The tool is especially helpful where official accounting system does not provide reliable information about efficiency and effectiveness of government expenditure mainly in developing countries.

During the last two decades PETS have been conducted in many countries in Africa and Asia in order to assess performance and to measure capture of rents in various service deliveries and most of them were conducted in education and health sectors. Majority of PETS were engaged in a task of finding reasons behind the weak relationships between public expenditure and human development outcomes in some developing countries where institutional settings have characteristics of deficient accounting, monitoring and reporting (Reinikka and Svensson, 2006).

A PETS successfully performs as a multi-facet working tool in economic research. The first way it works is categorized as a diagnostic tool which is useful in identifying concrete facts and basic problems such as leakage of funds within the system and service provider absenteeism. But here it does not suggest any solution for those problems. In some previous PETS conducted in Africa showed that the leakage of non-wage fund, which is defined as the resources originally allocated to but was not finally reached or received by the frontline service provider, was found to be a big problem. The share of ghost on the payrolls and leakage of salaries and allowances are also very common in developing countries[4]. According to Reinikka and Svensson (2001), it was proved by researchers that leakage is a very common and one of the major policy concerns in a developing country context (Ye and Canagarajah, 2002; Reinikka and Sevensson, 2001; Das et al, 2004).

[4] Payroll ghosts can be defined as imaginary service providers who usually receive salaries for doing nothing, or in other ways, those beneficiaries who are being paid without ever having been in service activities.

The second function of PETS is that it works as an analytical tool. After diagnosing the problems in a sector we need to understand the underneath causes so that proper solutions and interventions can be achieved by discovering the causes. And determining the extent of why some schools or schools in some part of the country suffer from high level of fund captures but others do not may act as the starting point in designing public expenditure policies in a concern to the relevant sector.

The third usefulness of PETS is that it acts as an impact evaluation technique to see the effects of a policy intervention that has been already implemented. The method compares pre and post evaluation data in order to identify the changes occurred. A simple preliminary PETS survey is conducted first in order to discover the problems in the sector before policy intervention has been taken place. To examine changes, later another survey with a set of modified research questions is done and results are compared to find any improvement.

Quantitative Service Delivery Surveys (QSDS)

Multi-purpose school surveys became more and more popular recently and are frequently used in examining efficiency of various education public spending in developing countries. Quantitative Service Delivery Surveys (QSDS) is one such quantitative tool that emphasizes on school related data from various dimensions: finance, incentives for staffs, behavior of service providers (teachers), input use, pricing, outputs gain and quality of services etc. QSDS's main concern is that even the resources have been reached to the last unit of expenditure management hierarchy, their usefulness in achieving better outcomes is relied on how efficiently they are used in a service provider unit such as a school or a hospital. From this point of view, a school or a hospital is the main unit of observation in data collecting efforts for a QSDS. However, in many cases a combination of PETS and QSDS is more powerful than a single tool to obtain reliable information about accountability, transparency and equity of public funds at the service provider level. This thesis will follow such a hybrid tool in conducting a primary survey while considering the education sector (more specifically the primary education sub-sector) of Bangladesh as a test case.

Rationale for the PETS-QSDS

We hypothesize that widespread corruption in resource management practices, leakages of funds or political and bureaucratic capture may lower significantly the welfare effects of public expenditure in various sectors in Bangladesh. In this connection, in order to provide policy makers with appropriate and necessary information about public resources we need to analyze and quantify their performance correctly. For that purpose we should select proper estimation techniques that can offer appropriate measures and reliable results. We follow previous studies to consider that Public Expenditure Tracking Survey (PETS) and Quantitative Service Delivery Survey (QSDS) are two of the most

appropriate tools that are helpful to assess the governance quality, efficiency, equity and performances of services delivered by the Bangladesh Government.

During recent years, the government of Bangladesh has increased spending amount in the education sector. To fulfill the education MDG and to achieve education for all people by 2021, every year a big portion of the budget is devoted to the sector. To be more specific, official education expenditure in primary and secondary levels is growing very rapidly. However, as it was mentioned in the first chapter only official record of allocating more resources does not imply that the originally allocated public funds finally reach to the frontline service providers (schools in education sector) and/or the final recipients (people).

Although the enrolment rates in primary schools are satisfactory in the country (In 2009 gross and net enrolment rates are reported to be 98 percent and 91 percent respectively), completion ratio is still poor because many of the enrolled students leave the school before completing primary education (To give an instance, it was reported officially that in 2007 the drop-out rate was as many as 50 per cent). Moreover, recently the trend in completion ratio has decreased sharply. More recent data shows that completion rate of primary school in Bangladesh have fallen from 70 per cent in 2000 to only 50 per cent in 2008.

Enrolment as well as completion rates in secondary and higher secondary schools also remain very low in the country. For some evidences, in 2005 the secondary enrolment rate was only 43 percent while in 2008 completion rate from secondary level was only 20 percent (CAMPE, 2009). Thus, it is indicative that only about half of the students pass primary school final grade while only one out of five students who entered can complete secondary schooling in Bangladesh which implies that only 10 percent of students who ever went to the primary school can pass secondary education level in the country.

Bangladesh's low rate of completion is obviously a serious concern for achieving universal primary education because, according to Osmani (2010), there exists a terrible indictment of the educational system in Bangladesh. On the other hand, quality of education (student teacher ratio) in the country ranks lower than many other Asian nations. Hence, simple question arises about the levels of efficiency, accountability and transparency of government spending in the country in general and the education sector particularly, although there are many other factors behind a low level of success. Here is the reason why the education system offers an ideal field of research in understanding the impediments that hinder higher performances of public expenditures.

Major Methodological Considerations

Methodological approaches used in PETS and QSDS have significant consequences on their ability to achieve pre-designed research objectives. Designing and implementing them for this thesis thus followed various options related to the choice of proper data collection strategies and estimation.

- *Tracking Resource Flows*

Determining the sector specific financial and quantitative data collection criteria in various administrative levels is crucial for a survey like the PETS-QSDS. In developing country context there are possibilities of leakage in public resources, non-wage funds, and supplies etc. when they pass through the service supply chain. For an example, public resources allocated for teachers' salary payment may be leaked through the emergence of ghost workers who receive remuneration without doing any job. Following Das et al. (2004 and 2004a), this study has chosen to track both wage and non-wage cash flows in various levels that are coming from the government as well as donors. We also included in-kid transfers in our survey questionnaire while collecting data from various service delivery units in the primary education sub-sector. Our attention has been focused mainly on some key issues: (1) whether a primary school receives its allocated amount or share in lump-sum payment and (2) if centralization is an appropriate path to follow in confirming targeted efficiency levels of fund management. In this connection, this study made an effort to check tracking in most categories of public funds intended to be received by a primary school.

- *Institutional Assessment*

Our second methodological approach became helpful to identify the institutional hierarchy through which necessary resources from the government are allocated and sent to various primary schools. This attempt helped us to achieve research objectives related to institutional assessment phase in the education sector. Quality of data and their consistency could also be justified by this assessment tool. Following Gauthier (2006), we collected information only at the service provider level. Such strategies also helped us to measure resources available for services and know the actual amount that was allocated. However, gathering field data in such a fashion is appeared challenging in Bangladesh because central level accurate information about resource allocation and grants for a primary school located in a remote area was very limited.

- *Sampling Strategy*

Sampling in a proper way is another important component of a PETS-QSDS study because a valid sample represents the universe it intends to describe. In such a survey various approaches can be followed to form the sample. But stratification by levels or categories and random selection sampling are frequently utilized in developing countries. In this thesis, however, informal sampling based upon convenience of facility access or ease of interviewing was followed. This is because of our lacks in necessary resources and time. But in the tracking survey we preferred to interview a greater number

of same facilities (primary schools) in only four districts in Bangladesh namely Brahman Baria, Comilla, Dhaka and Gazipur. Here it seems important to remind that survey results will be utilized as an evidence to support our second hypothesis and to make our claims about future policy design more strong and accurate. The survey itself is not the main focus for this thesis. However, our study specific techniques became helpful to see the differences in various actors' behavior and performances among a number of 50 service delivery units (primary schools) in Bangladesh (Reinikka and Smith, 2004).

- *Survey Instruments*

In a tracking survey, methodological consideration puts greater importance on survey instruments which rely mainly on survey objectives and initial modes of tracking flows. Collecting various types of data may impose greater variances in instruments used in the PETS-QSDS. In our proposed survey and data collection path we did rely on instruments that use proper modules for every level of government expenditure hierarchy including district level administration and lower levels in frontline service provisions at the unit. Nevertheless, our survey instruments and questionnaire appeared to be helpful in collecting proper sets of data that were needed to measure amount of resource allocation in decentralized level and also to triangulate collected information in lower phases of service delivery.

Survey Findings

- *Facts about Primary Education System in Bangladesh*

Bangladesh's low literacy rate forces the nation to recognize education as a priority sector by all subsequent governments since independence. Consequently, in the country primary education receives significant attention (Nambissan, 2003). During early1990s primary education system experienced a great enhancement following the World Conference on Education for All (WCEFA). Since then successive governments of Bangladesh have been taking many initiatives to fulfill the aim of education for all. As a starting point, the Compulsory Primary Education Act of 1993 which made the primary education free for all is regarded as one of the most notable achievements in the education sector of the country. Later education for girls up to eighth grade was declared completely free in order to encourage female education given that the proportion of illiterate women in the country is much higher than that of men. Moreover, following the WCEFA, donors invested heavily in the education sector and NGOs rapidly increased their participation in order to meet the country's future education related goals in all levels (Kalene et al., 2005).

The Primary education system in Bangladesh incorporates from grade one to grade five and the nation has eighteen million pupils in some 62,000 primary schools. Among the total number of institutions over 65% are government led while the rest are registered non-governmental primary schools that are assisted heavily by the State. While the overall management responsibility of primary education in

Bangladesh is borne by the Ministry of Primary and Mass Education (MPME), the Ministry of Education (MOE) formulates and implements policies for secondary and tertiary levels.

Since education in Bangladesh is basically financed by public funds, the entire costs of government led primary schools are borne by the State. The government pays salaries, distributes free books and bears all other education expenses for every single primary school in the country. The State also pays most expenses of non-government registered primary schools. For an example, 90 percent of basic salaries for teachers of these schools are paid by the government. Given the low revenue / GDP ratio in the country the government, however, is heavily dependent on external sources for necessary financing in the sector.

Table1: Basic Facts about Primary Education in Bangladesh

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. No. of Primary Schools										
(a) Total			620293	62377	80397	82020	81434	82218	81508	78685
(b) Government & Registered government										
(c) Private			60359	60678	60377	60863	60965	61018	57733	57733
(d) Others			1670	1699	946	1140	973	966	819	666
					19074	20017	19496	20234	22956	20286
2. Student enrolment (in thousand)										
a. Total			15450	15245	16225	16385	16312	16001	16539	16957
b. Boys			7779	7587	8091	8129	8035	7919	8241	8394
c. Girls			7670	7657	8134	8256	8277	8081	8298	8563
3. No. of teachers in government primary schools (in thousand)										
a. Total			255	255	162	162	182	182	361	395
b. Male			158	158	90	86	90	86	204	200
c. Female			96	97	71	75	91	96	157	194

Source: Bangladesh Government Ministry of Primary and Mass Education.

- *General Descriptive Findings*

We surveyed a sample of 50 primary schools in four districts of Bangladesh. Among these schools there were 36 fully government subsidized, 10 registered primary and 4 privately funded schools[5]. Most of the schools were selected from rural areas where there were very limited alternatives for the village people to send their kids for the purpose of education. There were two reasons for such a sampling choice in our survey. Firstly, in Bangladesh majority of the people (about 80%) live in rural areas and most of them live with poverty. Therefore, government education expenses have a big

[5] Expenses for registered primary schools are borne by the government but with notable discrimination. Teachers in such schools have to give the similar services provided by that of a government primary school. However, they are paid only a half of the salaries received by a person who works in a government primary school. Among the 4 privately funded schools one was led by an NGO.

influence in their lives. The second reason, as it was hinted in an earlier section, is related to the easy access of the school facilities for the purpose of interview.

Table 2: Type of School (Total 50 Primary Schools in Four Districts)

Category	Number	Percentage of Total
Government run primary school	36	72%
Government run registered primary school	10	20%
Private, government recognized but not aided school	4	8%

Table 3: Average Size of School (2012 data and expressed as nearest round figures)

Number of students in class (1-5)	
Number of students in class 1	56
Number of students in class 2	66
Number of students in class 3	70
Number of students in class 4	56
Number of students in class 5	44
Percent of female students	
Percent of female students in class 1	52%
Percent of female students in class 2	44%
Percent of female students in class 3	49%
Percent of female students in Class 4	57%
Percent of female students in class 5	51%
Ave number of teachers per school	4
Ave number of students per school	301
Average student to teacher ratio	75:1

Table 4: Schooling Outcomes

Primary School Completion Examination Pass Rate (% of total participants)	93.3
Primary School Completion Examination Pass Rate for female students (% of total female participants)	95.6

Table 5: School's Sources of Funding (including funds related to teachers' salary)

National government capitation grants	>94%
Other national government programs (like the Food for Education Program)	<1%
Local govt. support	<1%
PTA fees	0%
Donations (in-kind support)	<2%
NGOs	<2%

Source: Author's own estimation based on survey results

Table 6: Share of Fund Receiving Schools (except funds related to salary expenses, %)

Category of Funds	Share of total units who received any fund in 2010 and 2011 (%)
Schools received funds from national government capitation grants	20
Schools received funds from other national government programs	0
Schools received funds from local govt. support	4
Schools received funds from PTA fees	0

Other fees (Donations)	16
Churches/NGOs	4

Table 7: School Characteristics (% of the total sample)

School facilities have covered roofs	92
School facilities have at least one class room with a leaked roof	24
School facilities have Benches for students	100
School facilities have blackboards in all classrooms	20
School facilities have at least one toilets for students	96
School facilities have separate toilets for girls	40
School facilities have drinking water source for students	92
School facilities have electricity	20
School facilities have lights and fans in classrooms	12
School facilities have a playground	100
School facilities have a library	4
School facilities have specialized science class room	0
School facilities have computers	0
School facilities have separate Office for head teacher	4
School facilities have a separate staff room	4
School facilities have separate common room for teachers	0

Table 8: Record About Supervision and Accountability (% of total sample)

Facility has never been visited by outside official inspector	0
Facility has been visited by official inspector at least 3 times a year	96
Facility has been visited by official inspector more than 6 but less than 12 times a year	72
Facility has been visited by official inspector more than 12 times a year	20
Schools have no PTA or it has never met	4
Schools had PTA meetings at least 3 times a year	88
Schools had PTA meetings at least 6 times a year	68

We verified the study's hypothesis by our findings from the above PETS-QSDS survey and we found it partially true. It was revealed that widespread corruption in resource management practices, leakages of funds or political and bureaucratic capture lowered significantly the welfare effects of public expenditure in the education sector. The situation is severely against the favor of frontline service providers (school authority). Very few primary schools (less than 30 percent of the sample) had enough teachers to deliver quality education. During FY2008-FY2011 less than 10 percent schools got their allocated funds that were originally sanctioned from the central government. Local politicians always try to control and interfere in everything related to monetary decision of a primary school because school authority has no power at all in budget allocation and other important expense decisions. In this connection, we found agency problem in two layers namely *'between the citizens and politicians'* and *'between citizens and service providers'* appeared in public expenditure management process in the Bangladesh primary education sub-sector.

However, we could not find any free rider problem in primary schools we surveyed. But moral hazard was appeared in the hierarchy and reinforced in the team. In the process a central-local authority plan

is followed in most cases to share the responsibilities in decision making about fund disbursement and allocation.

In our survey questionnaire several instruments were used. The questionnaire included eight general sections which were answered by the head teacher. Therefore, we consulted with the head teacher as a primary respondent for our survey. Other teachers also took part in the survey by supporting the head teacher with relevant information and school records. Three separate data sheets were utilized to collect information about funding. The last section of the questionnaire focused on the sources and accuracy of the school records and relevant data. In the following sub-sections major findings from the survey are discussed based upon our survey questionnaire and from the viewpoints of some public expenditure related variables namely school facilities, school's sources of funding, school's spending of money, value of in-kind support received by the school, and supervision and accountability etc.

Majority of the government resources transferred to the primary schools are mainly for paying salaries of the teachers (over 95%). Very few of the public funds are used for goods and services or administrative expenses. It was interesting that only a few respondents believe that a primary school needs any administrative expenses. For expenses in Goods, a category whose basic items are namely brooms, chalk, pens, binding papers etc., every primary school receives a fixed amount of money in a yearly basis (Government primary schools receive TK.8400 which is equivalent to about US$100, non-government registered primary schools get TK.4600 which is equivalent to US$55, and private schools get no fund at all from the government for Goods expenses)[6]. In total it is a very tiny part (less than 2%) of the entire expenditure for the primary education program in the country. If considered from per student spending on goods and services it is extremely a low figure (TK.24 or US$ 0.28 per student per year in 2010 and 2011) and it is almost nothing compared to total expense account of a primary school. Donations and supports come mainly from the national and local governments, alumni students, and local people. These assistances include both monetary gifts and in-kind supports with text books, tables, chairs, black boards, and ceiling fans etc. Monetary funds are used for other purposes for maintenance of school facilities and purchase of very important consumable goods.

- *Teachers' Salaries and Benefits*

In the primary education sector in Bangladesh teachers' salaries and benefits constitute more than 95% of total expenditure. The researcher eagerly wanted to study in detail about the rate of ghost workers (teachers) who do not teach but receive salaries. But it was not possible because such issues are sensitive in nature and school authorities never disclose such information to the public. At the

[6] Although the exchange rate of US$ and Bangladesh TAKA continuously fluctuates, for the convenience of analysis, we assume 1 US$ to be equivalent to Bangladesh TAKA 84

same time the central government is unwilling to share payroll rosters. Moreover, during the time the survey was conducted these were very sensitive issues in Bangladesh because a nationwide movement demanding increment in salaries by non-government registered primary school teachers had been held.

Table 9: Breakdown of School Expenditures (Average in BDT)

Administrative cost	*0*
Staff-related expenses	
Teachers' salary	418,508
Teachers' bonus	43,227
Teachers' training	0
Facilities Related Expenses	
Rent on property	0
Expenses for scholastic materials (goods and services etc)	3,966

- *Leakage of Resources*

Non-wage Development Funds. The leakage of non-wage funds was estimated from the reporting of primary schools within the sample that received at least some amount of money that was previously allocated for them. Considering the entire sample most schools received very little or no fund at all. It was found that very few schools received non-wage funds in 2010 and 2011 fiscal years (only 10 schools out of 50) and among them majority are registered non-government primary schools (80%). The reason behind this is that registered primary schools are newly built and they need more funds to develop their school infrastructure facilities, especially school buildings and class rooms. Among the 10 fund-receiving school units there were only two (20%) that got the entire amount disbursed from the district education officer. Other eight of them replied that they received only a partial amount of the previously allocated funds. We simply calculated the fraction of leakage in the disbursed funds by utilizing the following formula. We found that on an average only 38% of the total fund finally reached to the school authority and the remaining 62% was leaked, which is very high.

$$\text{Leakage} = \frac{\text{Average capitation grant received by an individual primary school}}{\text{Average fund originally granted for it}}$$

Rule-based and Discretionary Funds. Along with our own estimation techniques it should be noted that leakage has been defined in two ways in the literature. Ablo and Ritva (1998) has introduced strict definition of leakage appropriate for rule-based expenditure and suggested the following equation in its estimation.

$$\text{Strict leakage} = 1 - \frac{\text{resourss actually received by the facility}}{\text{resources intended originally for the facility}}$$

On the other hand Lindelöw (2006) advanced narrow (or soft) leakage for discretionary funding and proposed the following equation to measure it.[7]

[7] It is the non-fixed allocation rule flows of fund expenditure which indicates the share of resources sent at a certain level in the hierarchy but not received by the facility level.

$$\text{Narrow leakage} = 1 - \frac{\text{resourss actually received by the facility}}{\text{resources originally disbursed by a higher authority}}$$

It was revealed that discretionary funds such as (sudden repairmen cost of school facilities which composes more than 60% of the disbursed amount) were leaked more than rule-based funds (like scholarships for female students from the central government) in Bangladesh primary education sub-sector. One probable reason for this situation is a greater discretionary power granted to politicians and local public administration without having proper supervision and adequate incentives programs (Das et al., 2004a).

Salary versus Non-salary Expenditure. The survey results indicated that non-wage resources which are channeled through inter-governmental transfer suffer from higher level of leakage and capture than wage related resources do. An agency problem between local politicians and school authority arises in the process of non-wage resource channeling because government officials and local politicians can use their information advantages to reduce the disbursed fund significantly. In contrast, in Bangladesh salaries and other wage resources are paid as a direct bank transfer from the relevant ministry to a certain worker or teacher at a primary school. Clearer rules and regulation that govern wage funds also contribute to reducing leakage and capture of such funds.

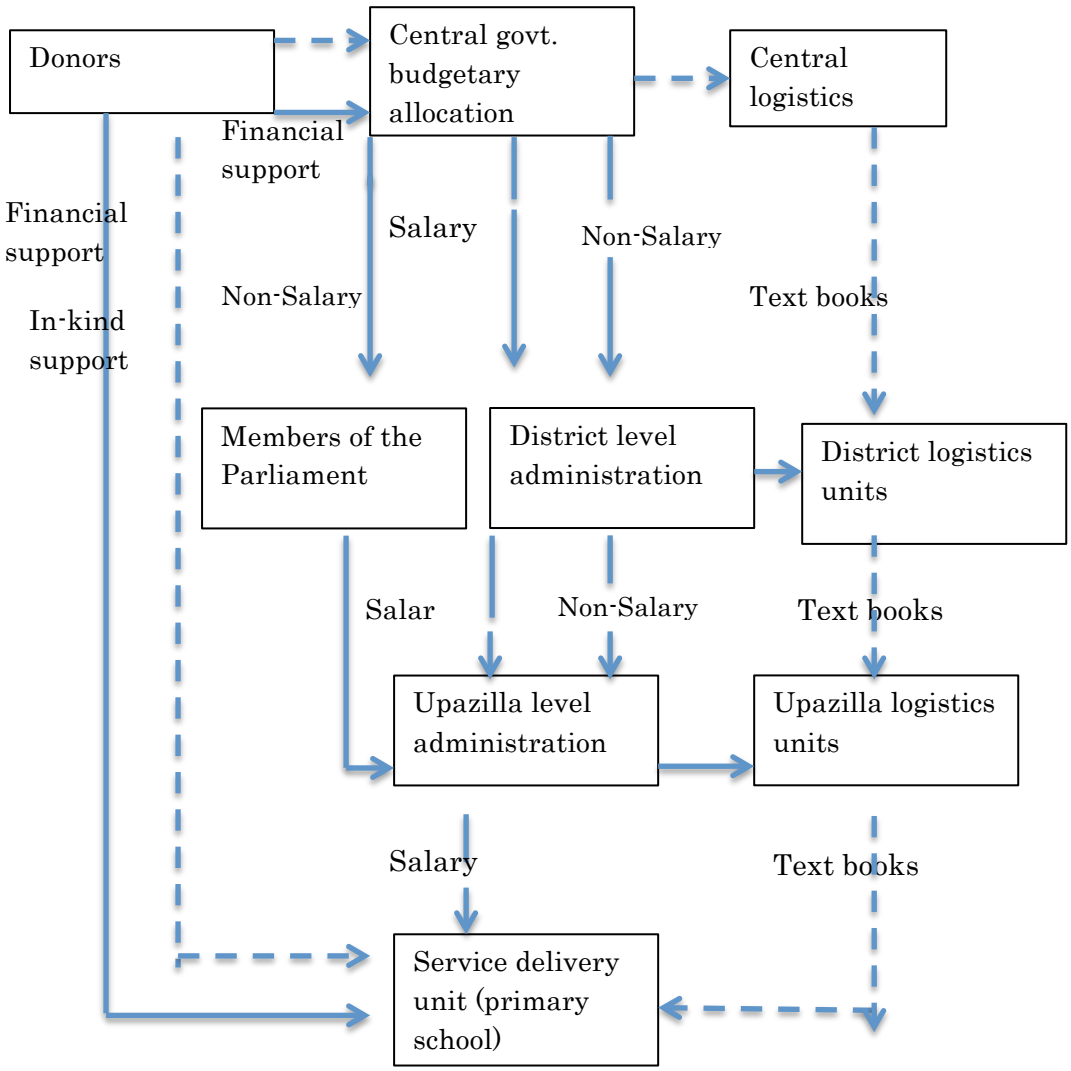
Causes of Fund Captures and Leakages (Institutional Assessment and Lack of Information). In Bangladesh most funds (both financial and in-kind) for the education sector expenditures are granted from the central government. About all funds except for the tertiary level education, districts get them and are supposed to pass those funds on to school facilities through the upazilla administration. Local members of the parliament also receive development funds directly granted from the government and can use them freely for development purpose of the locality. In this ground, with the lack of proper oversight by the central government, local politicians as well as district and upazilla officials maintain some degrees of discretion over these resources. They also have better information about the amount of money (which is varied from school to school) transferred for a certain school facility. On the other hand, school authority faces a situation of information asymmetry on disbursement of the capitation grant because of a higher cost associated with obtaining such information from the central government. The ultimate consequence is that allocated funds do not reach to a school facility according to the rules regulated by the central government.

Survey findings indicate that the supply of goods and services, teachers' salaries and other job benefits are not adequate enough. Almost all of the respondents (more than 98%) told that the amount of funds they are granted for a primary school is insufficient to cover the necessary costs. The supplies except text books are so insufficient that whatever they receive for the school becomes very useful.

Poor infrastructure and lack of teachers were two major problems that every head teacher identified in his/her school. Respondents reported that more than 80% primary schools suffer from lacks of necessary funds to repair old class rooms, get electricity connection and build enough number of toilets for students. Supply shortages and inadequacy of public funds sometimes lead the school authority to raise funds through charity and turn them to local people and other local government organizations like union parishad or upazilla council.

We came to learn that most of the teachers have a second job because teachers' salaries and bonuses are also not enough to maintain their families without having another source of income. On an average, a teacher receives about TK. 9,000 monthly salary including all other benefits which is equivalent to US$108. According to the respondents of this survey, it was not a sufficient amount to fulfill basic needs of a primary school teacher and his/her family.

Figure 6.1: Fund Disbursement Hierarchy in Primary Education in Bangladesh



Source: Estimated and drawn by author based upon own observations

- *Evaluating Primary Education Expenditure through Equity*

Equity in public expenditure is an important aspect to judge the performance of the relevant policies. Our equity analysis focused in estimating the value of an additional staff input at the school facility. It was found that per school rule-based expenditure had progressive and better records to have greater per student funding in regions where poorer and rural schools locate. However, government resource allocation was found to be regressive in nature if seen from the viewpoint of staff expenditure per pupil. Such grants were higher in primary schools located in urban and richer areas. Besides, rural schools also have been facing a problem of regressiveness in discretionary expenditures in primary education. The study found that on average poorer schools in rural Bangladesh receive about 43% less per student public funds from the government than that in urban areas. Moreover, regional inequality in public expenditure in Bangladesh, which can also affect equity negatively, is another feature of the current policies.

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