E-governance Preparedness of Bureaucracy: A Case Study of Office of the Deputy Commissioner, Dhaka

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Dedicated.....

To my parents who have always inspired me to be what I want to be.

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LIST OF ABBREVIATIONS

ADC	Additional Deputy Commissioner
ADM	Additional District Magistrate
BTRC	Bangladesh Telecommunication Regulatory Commission
DC	Deputy Commissioner
DM	District Magistrate
G2B	Government-to-Business
G2C	Government-to-Citizen
G2E	Government-to-Employee
G2G	Government-to-Government
ICT	Information and Communication Technology
IT	Information Technology
LAN	Local Area Network
MoPT	Ministry of Posts and Telecommunication
MoSICT	Ministry of Science and Information & Communication Technology
NGO	Non Government Organization
PC	Personal Computer
SICT	Support to ICT
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
UN	United Nation

ABSTRACT

Advancement in Information and Communication Technology (ICT) has added one important dimension to the concept of governance, which is the electronic aspect, and hence the term 'e-governance' has come in vogue. Electronic governance, i.e., e-governance does not at all alter the fundamentals of the original governance concept like transparency, accountability; rather it enhances the mechanism of ensuring good governance. The progress in ICT as well as immense pressure of globalization has facilitated awareness regarding e-governance in Bangladesh. Therefore, it is high time that government prepare itself in terms of implementing e-governance in order to cope with the requirements of the fast changing global environment. This study has attempted to assess the preparedness level of bureaucracy from the perspective of e-governance implementation. It has also endeavored to identify the most important hindrances to the implementation of e-governance in the context Bangladesh. Keeping the time constraint in view the study concentrates only on the Office of the Deputy Commissioner, Dhaka.

To assess the e-governance preparedness level, this study has taken as benchmark the 'UN's Five Stage Model of E-governance' that comprises of five stages namely 'emerging', 'enhanced', 'interactive', 'transactional' and 'connected'. For the purpose of meaningful and credible analysis an analytical model has been developed which is well supported by two very relevant theories: Technology Acceptance Model (TAM) and Vroom's Expectancy Theory. For the purpose of primary data collection questionnaire survey and interview method were used. On the basis of the primary data the researcher has examined the e-governance preparedness level both qualitatively and quantitatively. Since no quantitative benchmark was available to measure the preparedness, the quantitative analysis has been used as a validation measure of the qualitative judgment.

Analysis of primary data revealed some significant findings. A significant portion (31%) of the respondents who are officials does not have access to computer. Respondents having access to computer mostly share it with others for official use. The frequency of computer and internet usage for official activities is also very frustrating. Most of the officials do not have any formal ICT training and those who have such training have covered only very elementary aspects. Therefore, the overall readiness in terms of technical skills has been found to be unsatisfactory. The infrastructural and logistic

support has appeared to be reasonably inadequate considering the computer sharing pattern, internet connection and above all the power situation. Existing laws, rules and regulations are found to be very insufficient for smooth implementation of e-governance. The motivational aspect of the officials having ICT expertise is grossly missing in the policy. There is no incentive whatsoever for additional efforts to make e-governance endeavor successful. Response from the citizens and analysis of the data obtained from the officials uncovers the fact that the overall attitude of the officials is not very congenial to e-governance implementation. Tally with the key features of the UN's five stage model suggests that the office under consideration is at the transition point of the two stages 'enhanced' and 'interactive'. Such conclusion is made to mean that some elementary attributes of 'interactive' stage are present while the essence of the stage is truly absent. Therefore, in other words the finding is 'Office of the Deputy Commissioner, Dhaka' is trying to catch up with the 'interactive' stage but yet it has a long way to go to achieve it.

The perception of the officials and citizens about the hindering factor of e-governance implementation is somewhat similar. According to both the strata the two most significant factors hindering e-governance implementation are 'Lack of Infrastructure and Logistic Support' and 'Weakness of Policy and Regulatory Framework'. Finally, the study comes up with some recommendations to overcome the hindrances. These recommendations include, inter alia, improvement of infrastructure and logistic support with special attention to power situation and internet connectivity, formulation of adequate and appropriate regulatory framework, development of human resources, introduction of incentive mechanism and above all a coordinated and concerted effort at the central level.

CHAPTER ONE: INTRODUCTION

1.1 Background

The concept of governance has evolved with the change in the role of the governments along with the increased participation of other stakeholders like market, civil society, NGOs and above all, the citizens in the overall policy formulation as well as implementation. Although primarily this phenomenon emerged in developed countries, 'governance' has become a key agenda even in the developing world as a result of direct and indirect forces of globalization. The advancement in Information and Communication Technology (ICT) has added new dimension to the governance arena and the concept of e-governance (electronic governance) has gained much focus in the discourse of governance. Bangladesh is no exception to the global trend of inclination towards ICT and e-governance has become an area of concern within the country of late. The significance of 'e-governance' seems to have been identified by the state actors including political leaders and bureaucrats along with the non-state counterparts. Now that important stakeholders have consensus about the indispensability of e-governance from a normative viewpoint, it is equally important that actions are taken in accordance with well conceived short-term, medium-term and long-term action plans. To materialize such plans, all the stakeholders need to be well prepared and the bureaucracy is one of them. The e-governance readiness of the bureaucracy has got significant implication as far as the success of e-governance initiatives is concerned. It is very important to realize e-governance is not only a means to increase administrative efficiency but also a tool to enhance democracy by ensuring the citizen participation in the policy making process. It also has to be recognized that technology is only a means to an end where the 'end' is citizen welfare by an improved governance mechanism. The preparedness of e-governance is a multifarious phenomenon that includes social, cultural, psychological, economic and legal aspects along with the most commonly perceived aspect of technology. Therefore, it is very essential that the e-governance preparedness of the bureaucracy be evaluated objectively with a view to overcoming possible impediments to it. This study would try to assess the e-governance preparedness of the bureaucracy in terms of some predefined variables (discussed later) in accordance with the analytical framework.

1.2 Statement of the Problem

There is an undeniable wave of awareness about e-governance in the polity of Bangladesh at present. This awareness is, at least partially, motivated by one of the predominant political agenda of 'Digital Bangladesh' of the present government in power. In spite of this 'wave' there is a common feeling among the conscious citizens that the manifestation of the vision is not clear to people, including the politician and even the bureaucracy. Now, bureaucracy is the functioning machine that helps materialize the visions of the political executives of the government. No matter how sincere a political vision is, if the bureaucracy is not involved in the process of policy formulation and implementation properly, the success of vision will be at stake. Therefore, it is imperative that the preparedness of the bureaucracy in terms of e-governance is assessed properly. Since the field level bureaucracy has a greater opportunity to interact with the citizens than the central bureaucracy, the preparedness at the field level is no less important than that of the central bureaucracy. An objective analysis of the situation in this regard will definitely provide invaluable insights about what needs to be done to materialize 'e-governance' on a priority basis.

1.3 Illustration of the Problem

Against the backdrop of significant advancement in Information and Communication Technology (ICT) and extensive globalization, e-governance is an issue on which all the stakeholders have a consensus to adopt. In spite of some success in this area there is no space for Bangladesh to be complacent. Achievement of true e-governance does not seem to be an easy task in the face of myriad of problems to embrace.

Although the government's ICT infrastructure at the Ministry/ Division level has significantly improved over the years, the inadequacy of ICT logistics in many government offices has been a concern of the researchers. A 2008 study by SICT (Support to ICT) programme found that 24% of the Departments, Corporations and Commissions have no PCs in their offices. The offices at the Ministry/ Division level generally all have Internet access shared over LAN. Internet connectivity at lower levels is sporadic. There is no government wide network yet in place - so government offices have to rely on Internet to relay data and messages. (BEI, 2010)

The existing policy and legal framework does not yet encompass comprehensive guideline about e-governance implementation. Currently the e-Government policy framework is currently largely being driven by the ICT Policy, 2009 and the ICT Act, 2009. The present policy framework does not deal with some important issues. Few of such issues are, among others, technological standardization, data privacy and security and interoperability among shared service platform (to avoid duplication of effort) etc.

In absence of central e-Governance coordinating and monitoring entity, the tasks of prioritizing and controlling the quality of the e-governance projects remained as a challenge in Bangladesh (Hoque, 2009). E-Governance requires rethinking the standard operating procedure. The existing administrative rethinking mechanism is not aligned with e- governance activities and plans. Such lack of coordination between administrative reform and e-governance is another challenge to fully utilization of e-Governance (Morshed, 2007).

Lastly, the readiness of the human resources of the government, who are supposed to be the first mover to achieve e-governance, is not beyond question. In the present scenario the extent and nature of training available for the government employees is not sufficient and appropriate (Hoque, 2009). Apart from the technical skills, there is another important issue of mindset of the bureaucrats towards the prospective changes to be offered by e-governance. Quite often members of bureaucracy are accused of having fear of losing authority on the event of e-governance initiatives.

To conclude, e-governance is undoubtedly a desirable phenomenon for the achievement of good governance. At the same time, it is also true that it cannot be achieved through undergoing a number of standalone projects only. A holistic and coordinated articulation of the vision is required to make it happen. Such a comprehensive plan can be developed only when the present situation is assessed properly. One significant part of the assessment may be assessing the e-governance preparedness of the bureaucracy which is essential in the context of Bangladesh.

1.4 Rationale of the Study

The recent consciousness about information technology has paved the way for seriously considering e-governance as a development option for Bangladesh. E-governance, if successfully implemented, will not only make the government processes effective and

efficient, but it would also facilitate transparency, accountability of all the counterparts; above all it will enhance democracy by ensuring citizens' participation in the governance system. Now that a part of the society is becoming vibrant about e-governance all the stakeholders of 'governance' system should be keen to capitalize on the sentience. To successfully do so, an assessment of the preparedness of central as well as of field level bureaucracy is a true necessity. This research aims at finding some key aspects of e-governance preparedness in terms of some defined criteria. It also intends to identify some actions to be taken in order to enhance the preparedness within the bureaucracy.

1.5 Research Questions

1. What is the condition of e-governance preparedness in Bangladesh bureaucracy?
2. What are the major factors that may enhance (or negatively impact) the e-governance preparedness?

1.6 Objectives of the Study:

i. To assess the preparedness level of the bureaucracy in terms of e-governance.

ii. To examine the major factors that affect e-governance preparedness of the bureaucracy.

1.7 Scope of the study

The concept of e-governance is reasonably new in the context of Bangladesh and there has not been much study in this area. There are a number of issues that are related to e-governance preparedness that deserve extensive research. However, due to resource constraints this research covers only the Office of the Deputy Commissioner, Dhaka. It covers only class one officers, administrative officers (most commonly known as AOs who are class two officers) and the office assistants. It also includes some service seekers who are common citizens.

CHAPTER TWO: LITERATURE REVIEW

2. 1 E-government vs. E-governance: Crystallizing the Concepts

In the literature regarding 'e-governance', the term 'e-government' is profusely present, not surprisingly though. These two terms, as they appear, have significant interconnection although they do not mean the same thing. E-government is a narrower term of the two, referring to a transformation of the functions of the government to be driven primarily by ICT. The focus of the concept 'e-government' primarily lies in streamlining of the administrative processes with a view to achieving greater efficiency and effectiveness and secondarily on some online services to the citizens (Backus, 2001).

E-governance, however, is a broader term that includes transformation on at least four levels. First, it involves the transformation of the business of government (e-government). Secondly, it involves a transformation in the *operational definitions* of the principles upon which governance is founded, shifting towards increased participation, openness, transparency, and communication (Schiavo-Ocampo & Sundaram, 2001). Thirdly, it involves a transformation in the interactions between government and its (internal and external) clients, classified as government-to-citizen (G2C), government-to-business (G2B), government to its internal employee clients (G2E), government to other government institutional clients (G2G), and citizen-to-citizen (C2C). Finally, it involves a transformation of the society itself, through the emergence of connections, as well as relations among (NGOs), built and sustained using electronic means (Pablo & Pan: 2002).

Researchers have a consensus of some sort about the scope of e-governance in a sense that most of them, if not all, have defined the boundary of e-governance beyond the government or e-government. Backus (2001) argues that by achieving the concrete objective of supporting and simplifying governance for all parties - government, citizens and businesses through online services and other electronic means, e-governance uses electronic means to support and stimulate good governance. Hoque (2009) quotes Dobrica (2006) to state that e-governance aims to enable the interaction between government and citizens (G2C) (Government-to-Citizen), improve inter-agency relationships between G2G (Government-to-Government), and establish efficient relationship between the government and business enterprises (G2B) (Government-to-Business).

According to relevant literature e-governance has four major components as follows:

> **G2C (Government-to-Citizen):** Involves interaction of individual citizens with the government. G2C allows government agencies to talk, listen, relate and continuously communicate with its citizens, supporting, in this way of accountability, democracy and improvements to public services. G2C allows customers to access government information and services instantly, conveniently from everywhere.
>
> **G2B (Government-to-Business):** Involves interaction of business entities with the government. It includes e-transaction initiatives such as e-procurement and the development of an electronic marketplace for government helping businesses to become more competitive.
>
> **G2G (Government-to-Government):** Involves interaction among government offices as well as governments of other countries. Governments depend on other levels of government within the state to effectively deliver services and allocate responsibilities. G2G focus online communication and cooperation among the government agencies and departments to share database, resources, pool skills and capabilities with a view to avoiding duplication and enhancing the efficiency and effectiveness of process.
>
> **G2E (Government-to-Employee):** Involves interaction between the government and its employees. It gives employees the possibility of accessing relevant information regarding: compensation and benefit policies, training and learning opportunities, civil rights laws, etc. G2E refers also to strategic and tactical mechanisms for encouraging the implementation of government goals and programs as well as human resource management, budgeting and accounting.
>
> Source (Taifur, 2006 and Valentina, 2004)

So, conceptually it can be argued that ‘e-government’ is a prerequisite of ‘e-governance’ while it is also one of the actors of the overall ‘e-governance’ system. For the purpose of this study these two terms shall NOT be interchangeably used but various stages of

'e-government' according to different model will be implied as the stages of 'e-governance'. This is justified because of the fact that achieving higher degree of e-government undoubtedly enhances e-governance as well.

2. 2 Stages of E-governance

As mentioned above, 'stages of e-government' will be interchangeably used with 'stages of e-governance' for the purpose of this study. Researchers and institutions have developed different models to describe various stages of e-government at different point of time.

According to the United Nations' E-government Survey (2008), there are five stages of e-government evolution. These stages are as follows:

> **Stage I - Emerging:** A government's online presence is mainly comprised of a web page and/or an official website; links to ministries or departments of education, health, social welfare, labour and finance may/may not exist. Much of the information is static and there is little interaction with citizens.
>
> **Stage II - Enhanced:** Governments provide more information on public policy and governance. They have created links to archived information that is easily accessible to citizens, as for instance, documents, forms, reports, laws and regulations, and newsletters.
>
> **Stage III - Interactive:** Governments deliver online services such as downloadable forms for tax payments and applications for license renewals. In addition, the beginnings of an interactive portal or website with services to enhance the convenience of citizens are evident.
>
> **Stage IV - Transactional:** Governments begin to transform themselves by introducing two-way interactions between 'citizen and government'. It includes options for paying taxes, applying for ID cards, birth certificates, passports and license renewals, as well as other similar G to C interactions, and allows the citizen to access these services online 24/7. All transactions are conducted online.

Stage V - Connected: Governments transform themselves into a connected entity that responds to the needs of its citizens by developing an integrated back office infrastructure. This is the most sophisticated level of online e-government initiatives and is characterized by:

1. Horizontal connections (among government agencies)
2. Vertical connections (central and local government agencies)
3. Infrastructure connections (interoperability issues)
4. Connections between governments and citizens
5. Connections among stakeholders (government, private sector, academic institutions, NGOs and civil society)

In addition, e-participation and citizen engagement are supported and encouraged by governments in the decision-making process.

This five stage model will be used as a basis for collection of data as well as analyzing them.

2. 3 Key Findings in Bangladesh Context

There have been quite a number of studies that attempted to assess the scenario of e-governance in Bangladesh in general. Hoque (2005) observed that practice of electronic correspondences, by the ministries and divisions in the Bangladesh Secretariat, had not yet become trendy. According to his survey, e-mail correspondences by the ministries/divisions hardly happen among counterpart ministries and departments or it happens infrequently with NGOs and civil society. E-mail communications mostly happen with the foreign organizations only. More than 72% ministries/divisions, so far, never communicate with general people through e-mail. He also noted that mere 15% of the 20 websites, to some extent, use Bangla content together with English; while 85% are created in English only. The finding of the study was neither the government nor the citizens were prepared enough in terms of e-governance.

Researchers have showed their concerns for inadequacy of regulatory framework to successfully implement e-governance in Bangladesh. Mahbubul (2007) observed that the regulatory framework in Bangladesh has not yet been modernized to accommodate the growing needs of the electronic world. Still, in government offices, email has no official

value and cannot be legally considered as an acceptable mode of communication. He also referred to a study conducted by the Planning Division covering 303 government institutions throughout Bangladesh covering a total of 35,658 officers and 1,03,126 staff that the Personal Computer (PC) to Employee ratio was 0.09 whereas PC to Office ratio was 0.35 both of which undoubtedly indicated very poor status of PC use in government offices.

According to the United Nations' E-government Survey (2008), Bangladesh has improved during previous three years in terms of e-governance readiness. The study claims that in 2005 Bangladesh ranked 162 having index of 0.1762 whereas in 2008 it ranked 142 having index of 0.2936. This information suggests that Bangladesh is improving in terms of e-governance. But at the same time it is noteworthy that in South Asia Bangladesh is ahead of only Nepal while lagging behind all other neighbors. So the question remains about how fast is Bangladesh improving and what could be done to enhance the speed of improvement.

As the concept of e-governance is relatively new in the context of Bangladesh, not many research works have been performed to evaluate the preparedness. Bangladesh Enterprise Institute performed two studies in this area. The first one titled 'Study of e-Government in Bangladesh' was carried out in 2004. The second one titles 'Realizing the Vision of Digital Bangladesh through e-Government' and was performed in July 2010. The second study report puts some light on the e-governance initiatives taken in Bangladesh since mid 1990s. It also gives some qualitative judgment about the e-governance status in Bangladesh. Major finding of the study was Bangladesh is advancing in terms of e-governance implementation (BEI, 2010).

Although the research works conclude about the lack of human resources readiness, they did not focus on the bureaucracy for the purpose of the study. Therefore, there is an obvious space to study about the real preparedness of the bureaucracy with a view to having an in-depth analysis.

CHAPTER THREE: OVERVIEW OF E-GOVERNANCE IN BANGLADESH

3.1 Introduction

This chapter provides an overview of e-governance in Bangladesh as whole. It also offers a brief introduction to the Office of the Deputy Commissioner, Dhaka—the focus of my research. In course of delineating the e-governance scenario, the evolution of concept of e-governance is also touched upon at length.

3.2 Brief Overview of Office of the Deputy Commissioner, Dhaka

Bangladesh comprises of 64 districts and Dhaka is one of them. The representative of central government at the district level is the Deputy Commissioner and his/ her office is the DC Office which is the area of study of this research. Office of the Deputy Commissioner (DC Office) is one of the most important offices of the country; and Dhaka being the capital of Bangladesh, Dhaka DC office is of utmost importance as far as service delivery and presence of government is concerned. A large number of people of all sections visit this office for getting various kinds of services on a regular basis. The Deputy Commissioner, Dhaka has five Additional Deputy Commissioners (ADCs) namely ADC (General), ADC (Revenue), ADC (Land Acquisition), ADC (Education and Development) and Additional District Magistrate (ADM). The DC plays two very important roles in addition to his role as deputy to the Commissioner. These two roles are District Magistrate (DM) and Collector. The role of DM is to oversee the executive magisterial functions within his jurisdiction whereas as ‘Collector’ he supervises the revenue collection system within the district. Therefore major functions of DC Office, Dhaka include Land management and Land Acquisition, Executive Magistracy, Supervision of Development Activities, Public Exams, National and other elections, treasury functions, Issuance of different types of licenses, Maintenance of Law and Order situations, etc.

3.3 Evolution of E-governance in Bangladesh

Utilization of technology in service delivery is not an absolutely new phenomenon in Bangladesh. Initiatives were evident even more than one and a half decade ago. However, special thrust has been given to the ICT sector not more than a decade ago. Since then, the concept of e-governance seems to have conceived much better than ever before. Initially, there was a clear emphasis on building ICT infrastructure, possibly deemed as a pre-requisite to the delivery of e-citizen services. However, despite some successes, many of these e-government projects did not sustain in the long run due to lack of long-term visions for those projects, and myriad other challenges. Over time, the government modified its approach and undertook strategies to address some of those challenges. Increasing number of citizen centric e-services projects was gradually undertaken. However, due to various factors, many of those projects had limited scope, and interoperability and integration between those services were largely absent. In the era of the present government, a confluence of favorable factors has been playing a positive role towards a renewed vigor towards the prospects of e-Government. The evolution of the concept of e-governance in Bangladesh can be viewed as the continuum of the three distinct phases as described below.

3.3.1 Phase I (Late 1990s to 2006): Infrastructure Building

Early efforts started in mid 1990s, when the government automated the railway ticketing system. Another notable project from this period was the e-birth registration project under Rajshahi City Corporation in 2001, which made the process significantly faster and more efficient. Another early success was the automation of BANBEIS, which included GIS mapping of all schools and detailed information regarding them (including logistics, teachers, etc.), enabling unprecedented efficiency in education planning.

It can easily be noticed, however, that each of these projects were essentially the automation of existing government processes. While these increased efficiency in the respective agencies, they were not necessarily targeted towards empowerment of citizens through easy and open access to information and government services.

This trend of infrastructure building and process automation continued in a more coordinated manner from 2002-03, with the formation of the Support to ICT (SICT) Task

Force Project, a publicly funded implementation arm of the National ICT Task Force based at the Planning Commission. SICT functioned like an internal facilitator which conceptualized, planned and prioritized projects, and provided funding and technical assistance to line ministries to implement them. SICT undertook a total of 38 projects, approximately 63% of which were focused primarily on internal automation and infrastructure building, and has completed 34 so far (BEI, 2010).

Another public entity, the Bangladesh Computer Council (BCC), provided key support with respect to infrastructure development, technical assistance and capacity building for various e-Government initiatives. The first full-fledged ICT policy of Bangladesh, a major milestone in the path to e-Government, was passed in 2002, following the then Prime Minister's declaration of ICT as a 'thrust sector'. The document was focused heavily on ICT infrastructure building, process automation and creating an enabling environment. The policy, therefore, was literally largely an 'ICT policy', and not an e-government policy per se, although it represented the de-facto e-Government policy until 2009. The policy adequately reflects the approach of the government towards e-Government for much of this period (until 2006) - as being limited to ICT capacity and infrastructure development, and not as a core development and governance issue.

Many of the projects initiated by the SICT or the line ministries themselves during this period did not sustain in the long run. In May 2008, a Review Committee formed by the Caretaker Government found that out of the 103 policy directives of 2002, only 8 were fully or largely accomplished, 61 were partially accomplished and 34 remained unaddressed.

3.3.2 Phase II (2006 to 2009): Isolated E-services

Since 2006, with the caretaker government taking over, a gradual shift was noticed in the approach to e-government. The top-down approach to planning was gradually being replaced by more participatory approach within different entities of the government. It was increasingly realized that without internal demand and ownership generated through a planning process, success with such projects, which required extensive change management, could not be achieved.

An entity, which played an important role in this shift, was the Access to Information (A2I) Programme at the Prime Minister's Office (PMO). The programme was initiated in

2006 with support from UNDP to support the e- government Cell at the PMO. Although A2I was not directly in charge of implementing e-government projects, it took significant initiatives to generate internal bureaucratic demand for e-government, such as the series of workshops which led to 53 e-citizen services being committed to by the secretaries of various ministries and divisions in June 2008. Similarly, 64 e-citizen services were later identified by Deputy Commissioners (DCs) for implementation. A2I also provided continuous technical support and consultation to these projects.

Apart from projects facilitated by the A2I, there have also been an increasing number of projects being initiated by different divisions and ministries themselves, which insinuate a substantial increase of the administration's demand for e-government. This demand is likely to increase further with recent initiatives like the Digital Innovation Fair, which required ministries and departments to showcase their e-government projects and e-services, and are likely to create a sense of competition between ministries.

Despite this welcome trend towards the provision of information and services to citizens, the e-services designed and implemented during this period were hardly adequate. Also, new challenges surfaced along with some previous ones which persisted and were not addressed adequately during this period, particularly with respect to leadership and ownership of e-Government projects. The focal points for e-government at the ministries were all at the Joint Secretary level, with relatively little decision making power, and insufficient incentives for initiating e-government projects since they get transferred frequently.

3.3.3 Phase III (2010 and onward): Beyond the Concept of Isolated Services

After all the efforts to provide electronic services in an isolated manner, it seems that the government tends to realize that e-governance is not only about providing e-services to citizens. The holistic picture is being dominant under the circumstances of advancements in other countries. Recent developments yield indications that e-government is moving to the next phase in Bangladesh, away from isolated e-services towards more integrated, connected and transactional e-services. The present government came to power with the pledge of building a "Digital Bangladesh", and has tried to keep consistent focus on this promise so far. This has resulted in a political climate highly supportive of and conducive to e-government projects. A recent initiative (in 2010), the Digital Innovation Fair, born

out of the A2I program at the PMO, took this opportunity and showcased the various successful and ongoing projects undertaken by the Ministries, effectively putting government agencies in a competitive environment and giving citizens an unprecedented opportunity to witness what services the Government is providing, thereby creating a demand for these services. Although one might term the initiative as a political showdown, the awareness building aspect as well as the positive competition among various ministries that entailed such effort can never be ignored.

Apart from the political will, which is undoubtedly a critical element for success, several other favorable factors have also propitiously converged in recent times. Most ministries have undergone extensive internal process automation and infrastructure development projects, which are usually the most resource consuming, and most of these projects have been completed. There have also been demonstrated successes in the creation and deployment of e-services. All this sets the stage for integrating the front-end services with automated backend processes, through holistic planning, and improving the quality and efficiency of e-services.

The modality of private sector involvement is also undergoing a paradigm shift, from vendor-like approaches towards public-private partnerships (PPPs), following demonstrated successes of this new model like the customs house automation project. Private software companies are recognizing the business potential in automating government services and making them more accessible, and the government is also encouraging the private sector to come forward in implementing various projects (not specifically e-government projects only) as partners. Even more importantly the government is in the process of developing a policy document that will highlight the immediate priorities for Digital Bangladesh. This will undoubtedly help detail out the strategic approach and timeline for e-government for the next few years.

3.4 Conclusion

Despite these commendable initiatives and positive developments, which have improved the climate and preparedness for e-government in Bangladesh, there are certain gaps and challenges that must be overcome in order to make the most of this opportunity of awareness in terms of e-governance. There is still need for e-government champions at the top bureaucratic levels for effective and dynamic decision making regarding

e-government. There is still no central coordinating authority for e-government, and tensions between the various parties involved in e-Government implementation often results in suboptimal performance due to lack of collaboration and integration of plans. Whatever initiatives are being taken at the central or national level must be replicated to the field administration level in order to ensure that common people can enjoy the benefits of e-governance. To do that successfully, DC offices at all the districts must be capable of delivering e-governance services to the citizens at the interior levels.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

In simplest terms, research methodology generally means the way of achieving the research objectives. To be more precise, it primarily focuses on the method(s) of data collection along with the justification of using the method(s). It also includes basic parameters to be chosen related to the selected method(s). In addition to that, the instruments for gathering data also fall within the definition of methodology of a research (Aminuzzaman: 1991). This section of the proposal intends to depict the methodology of this study.

4.2 Methods

Assessing the e-governance preparedness and identifying the influencing factors is a matter of qualitative judgment. However, to prioritize actions to enhance such preparedness deserves some sort of quantitative evaluation. Therefore, a combination of qualitative and quantitative approach is used to attain the objectives of this study. For the purpose of this study, three methods are used namely

i. Content Analysis
ii. Interview
iii. Questionnaire Survey

Content Analysis: This includes collecting related information and data from all relevant books, documents, published and unpublished research works available, online articles, notes etc.

Interview: This study includes interviewing of some key personnel involved with existing e-governance initiatives like ‘Access to Information Programme’ and some key personnel of relevant offices like Ministry of Science and Information & Communication Technology (MoSICT), Ministry of Posts and Telecommunications (MoPT), Bangladesh Telecommunication Regulatory Communication (BTRC) etc. The prime objective of interview method is to collect information about the existing law, regulation and circular related to e-governance.

Questionnaire Survey: This survey is intended to gather primary data about e-governance preparedness with a semi-structured questionnaire.

4.3 Sources of Data

The data for this study were collected both from primary and secondary sources. Secondary data were drawn from the existing literatures like books, newspaper reports, previous research works, seminar papers, reports etc.

Primary data were collected through questionnaire survey. The respondents included the employees working at the Office of the Deputy Commissioner, Dhaka.

4.4 Data Collection Technique

To collect data, in-depth interviews were conducted through open ended semi structured questionnaire. Two sets of questionnaire have been used to collect primary data, one for the officials and the other for the citizens.

4.5 Sampling

Due to resource constraints all the employees working in the Office of the Deputy Commissioner, Dhaka could not be chosen as respondents. Therefore, *Stratified Random Sampling* was deliberately used to choose the respondents for the purpose of the questionnaire survey. Three strata will be chosen from each of the study areas namely *class one officers*, *administrative officers (class two)* and the *office assistants*. Apart from the employees working at the DC office, some service seekers were also covered.

4.6 Sample Size

a. Questionnaire Survey:

A total of 65 (sixty five) respondents were chosen from the three strata mentioned above for the questionnaire survey. The composition of the respondents was as follows:

Table 4.1: Respondent Distribution for Questionnaire Survey

Study Area	Stratum	Number of Respondents
Office of the Deputy Commissioner, Dhaka	Class One Gazetted Officer	15
	Administrative Officer/ Office Assistant	20
	Service seekers (Citizens)	30
	Total	65

Justification of Strata Sizes: The class one officers are involved in the decision making process more actively, so they will compose a significant portion of the total respondents. The office assistants/ administrative officers are mostly involved in initiating the files and most of the communication related works. Therefore they also compose a significant portion of the sample. The proposed number of service seekers (citizen)

b. Interview:

Table 4.2: Distribution of Interviewees

Serial	Interviewee's Organization	Number of Interviewees
1.	Ministry of Science and Information & Communication Technology (MoSICT)	1
2.	Ministry of Posts and Telecommunications (MoPT)	1
3.	Bangladesh Telecommunication Regulatory Communication (BTRC)	1
4.	Access to Information Project	1
5.	Renowned ICT/E-governance Expert	2
	Total	6

4.7 Data Validation

The collected data have been validated through cross checking with each other and with the secondary sources.

4.8 Data Analysis Tools/ Technique

The collected data were processed and analyzed using statistical techniques and instruments. For the purpose of analyzing the data Statistical Package for the Social Sciences (SPSS), Microsoft Access and Microsoft Excel have been used.

CHAPTER FIVE: THEORETICAL AND ANALYTICAL FRAMEWORK

5.1 Introduction

The objective of this chapter is to establish an analytical framework that is justified by relevant theories. While developing the analytical framework, the pertinent theories are elaborately discussed with their origination and their relevance to the focus of research is also depicted here. Once the theories and their constructs are elaborated, this chapter aims at formulating the analytical framework which contains dependent and independent variables that have bearing upon the area of this research. Lastly, a section of this chapter attempts to verify the linkages between the independent and dependent variables with the help of the theories that compose the theoretical framework of this study.

5.2 Relevant Theories

As the objective of this study is to assess the preparedness level of bureaucracy in terms of e-governance, adoption of technology is a key issue. This adoption is likely to be affected by a number of factors. For the purpose of identifying those factors in developing an analytical framework for the research, two theories is considered, namely *Technology Acceptance Model* and *Vroom's Expectancy Theory*. These theories are elaborated in the following sub sections with a view to establishing their relevance with the study.

5.2.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) represents one of the explanatory models having most influenced the theories of human behavior (Venkatesh, Morris, Davis, & Davis, 2003). The TAM was specifically developed with the primary aim of identifying the determinants involved in computer acceptance in general; secondly, to examine a variety of information technology usage behaviors; and thirdly, to provide a parsimonious theoretical explanatory model (Davis, Bagozzi, & Warshaw, 1989). It is rooted in social psychology and draws on Fishbein's and Ajzen's (1975) Theory of Reasoned Action (TRA), which establishes that the intent to produce a behavior depends on two basic determinants: attitude toward behavior and subjective norms. Subjective norms refer to the reasons for producing a certain behavior or not and make the link between the latter

and an expected result, whereas attitude toward behavior refers to the positive or negative value the individual associates to the fact of producing the behavior.

Technology Acceptance Model (TAM) attempts to explain why a user accepts or rejects information technology by adapting TRA. TAM provides a basis with which one traces how external variables influence belief, attitude, and intention to use. Two cognitive beliefs are posited by TAM: perceived usefulness and perceived ease of use. According to TAM, one's actual use of a technology system is influenced directly or indirectly by the user's *behavioral intentions*, *attitude*, *perceived usefulness* of the system, and *perceived ease of use* of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use. Figure 5.1 depicts the original TAM (Davis, 1989).

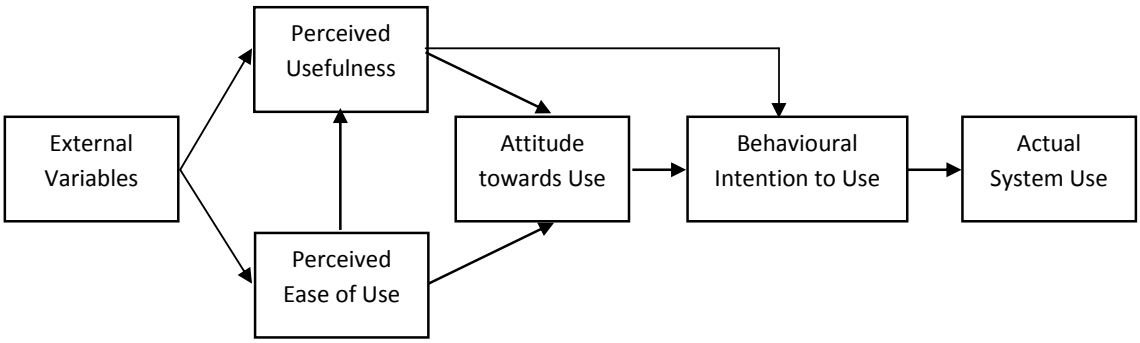

Figure 5.1: Technology Acceptance Model (Davis, 1989) [referred by Carter & Bélanger: 2005]

The TAM suggests that attitude would be a direct predictor of the intention to use technology, which in turn would predict the actual usage of the technology. Davis and Venkatesh (1996) however, suggest that attitude would not play a significant role but rather that perceived ease of use (expectation that a technology requires minimum effort) and perceived usefulness (perception that the use of a technology can enhance performance of a task at hand) would determine the intention to use a technology.

The 'External Variables' segment of Figure 5.1 has important significance on the construction of the analytical framework of this study. This is to emphasize the fact that there are quite a number of factors that have the potential to influence the perceived ease of use and perceived usefulness so as to have an indirect bearing on the adoption of e-governance related systems that include both process and technology. Venkatesh and Davis (1996) focused on understanding the antecedents of the perceived ease of use. They

concluded that computer self-efficacy acts as a determinant of perceived ease of use both before and after hands-on use and that the objective usability was found to be a determinant of ease of use only after direct experience with a system. Some other researchers found that e-learning self-efficacy was found to have indirect effect on students' intentions through perceived ease of use (Grandon, Alshare, and Kwan: 2005). Mungania and Reio (2005) found a significant relationship between dispositional barriers and e-learning self-efficacy. Park (2009) argues that variables related to the behavioral intention to use information technology or to the actual use of information technology could be grouped into four categories: individual context, system context, social context, and organizational context. While social context means social influence on personal acceptance of information technology use, organizational context emphasizes any organization's influence or support on one's information technology use.

The above discussion clearly depicts that there are quite a number of factors that can influence the 'actual use' of any system. Technology Acceptance Model (TAM) provides an option, in the form of 'external variables', which offers researchers space to develop their own frameworks regarding the usage of any information technology related system. The analytical framework of this study (described in section 2.3), primarily based on the proposition of TAM, identifies few independent variables that are likely to have bearings upon the preparedness in terms of e-governance through the actual use of the systems.

5.2.2 Vroom's Expectancy Theory

Currently one of the most widely accepted explanations of motivation is Victor Vroom's *Expectancy Theory*. In brief, Expectancy Theory argues that the strength of a tendency to act in a specific way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual. To make this simple, expectancy theory says that an individual can be motivated to perform better when there is a belief that the better performance will lead to good performance appraisal and that this shall result into realization of personal goal in form of some reward (Robbins & Judge: 2008).

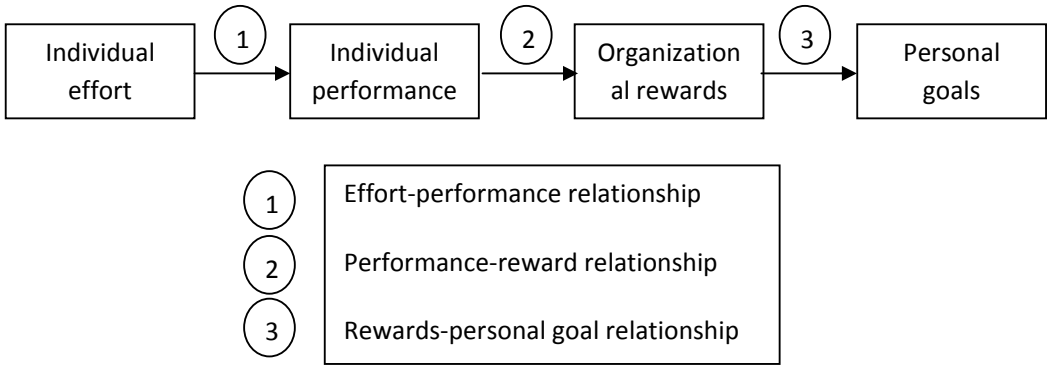

Figure 5.2: Expectancy Theory (Adapted from Robbins & Judge: 2008)

Vroom's Expectancy Theory assumes that behavior results from conscious choices among alternatives whose purpose it is to maximize pleasure and minimize pain. Together with Edward Lawler and Lyman Porter, Victor Vroom suggested that the relationship between people's behavior at work and their goals was not as simple as was first imagined by other scientists. Vroom realized that an individual's performance is based on factors such as his/ her personality, skills, knowledge, experience and abilities.

This Theory is often presented as Vroom's VIE Model of Motivation. The VIE model consists of the following elements:

Expectancy (Effort-Performance Relationship): Expectancy relates to the confidence that individuals may have in themselves in accomplishing a certain task or assignment satisfactorily. If the individual does not regard himself as competent enough to do a

certain job, the individual will not see it as feasible to get the desired rewards, and hence demotivate the employee.

Instrumentality (Performance-Reward Relationship): Instrumentality refers to the individual's believe in that the accomplishment of a given task, will result in the attainment of some valued reward. If instrumentality is high, an employee believes that certain actions will result in the attainment of the rewards valued by him/her. Instrumentality refers to the importance of that e.g. employees see a clear path to rewards and goal attainment, and that they trust that managers will reward their actions as promised. If recognition is seen as valuable by an employee, the manager must thus assure that the employee believes that he/she will get this reward, if the task is accomplished satisfactorily.

Valence (Rewards-Personal Goal Relationship): Valence is the strength of an individual's preference for obtaining some particular outcome. Valence will be positive, when the individual prefers to attain some outcome to not attaining it. If the individual is indifferent, valence will be zero. Great valence will therefore strengthen e.g. an individual's motivation for attaining a particular outcome, which makes it important for managers and employers to discover what is valued by the employees. If an extrinsic factor, such as recognition, is seen as a valuable outcome by an employee, managers may use this information to motivate his/her employee.

5.3 Analytical Framework

In accordance with the above two theories five independent variables have been identified that may possibly affect the only independent variable *'e-governance preparedness'*. These independent variables are *Technical Skill, Infrastructure and Logistic Support, Policy and Legal Framework, Attitude,* and *Incentive on ICT Usage*.

Technical Skill of using any system is a factor that can affect the perceived ease of use of the concerned system. So, it can be included as one of the external variables mentioned in the Technology Acceptance Model (TAM). This is also applicable for another independent variable *Infrastructure and Logistic Support* which is very likely to affect the perceived ease of use of e-governance systems. *Policy and Legal Framework* related with e-governance is another external variable that can affect the perceived usefulness of the

system. Another variable *Attitude* is also justified as an independent variable because it is also present in the TAM as an intermediate variable.

The effect of the fifth independent variable (i.e., *Incentive on ICT Usage*) on e-governance preparedness can be explained by Vroom's Expectancy Theory as it stipulates that a tendency to act in a specific way depends on the possible outcome. Therefore it can be argued that bureaucrats' e-governance preparedness can be affected on whether there is any incentive on using ICT.

According to the above argument an analytical framework for the purpose of this research has been developed which is given in Figure 5.3:

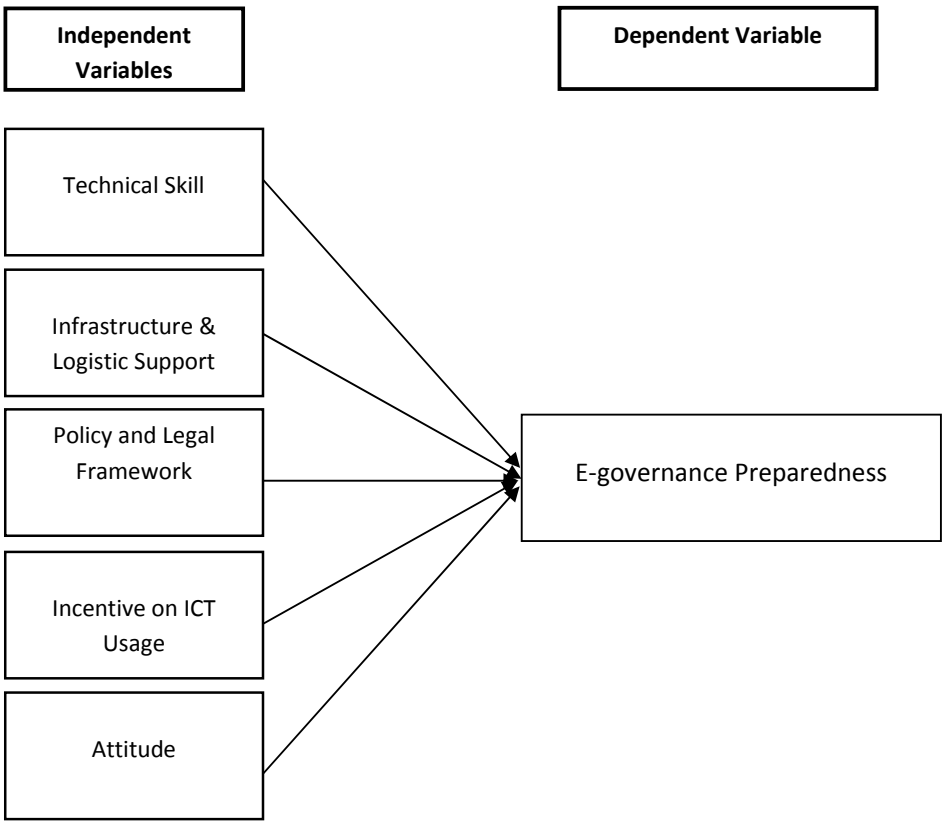

Figure 5.3: Analytical Framework

5.4 Measureable Indicators for Independent Variables

Table 5.1: Indicators for the Independent Variables

SL.	Independent Variables	Indicators	Source of Data*
1.	Technical Skill	Training and the contents	Q
		Ownership of Computer for personal use	Q
		Fluency of Computer Operation	Q
		Internet connection at home	Q
		Personal e-mail	Q
2.	Infrastructure and Logistic Support	Power Situation	Q, I, C
		Computer and Accessories at workplace	Q, C
		Internet connection at workplace	Q
		Internet Speed at office	Q
3.	Policy and Legal Framework	Opinion of Officials about Adequacy of ICT related Laws/ Rules/ Regulations	I, C
		Opinion of Citizens about Adequacy of ICT related Laws/ Rules/ Regulations	Q
4.	Incentive on ICT Usage	Monetary benefit package on use of ICT at office	Q, I
		Promotion prospect	Q, I
		Intangible benefits (like appreciation etc.)	Q, I
5.	Attitude	Citizens' Perception about Attitude	Q
		Utilization of Existing ICT Facilities (Officials' Perspective)	Q
		Utilization of Existing ICT Facilities (Citizens' Perspective)	Q

*Questionnaire = Q; Interview = I; Content Analysis = C

CHAPTER SIX: DATA ANALYSIS AND FINDINGS

6. 1 Presentation of Primary Data

6.1.1 Composition of Respondents for Questionnaire Survey

Table 6.1: Composition of Respondent for Questionnaire Survey

Questionnaire	Respondent Criteria	Number of Respondents	Total
Questionnaire 1	Class One Officers	15	35
	Administrative Officer/ Office Assistant	20	
Questionnaire 2	Service Seekers (Citizen)	30	30
		Total	65

The composition of respondent for the questionnaire survey was as above. For the class one gazette officers and administrative officers/ office assistants there was single questionnaire (Appendix I & II) whereas for the service seekers another questionnaire (Appendix III & IV) was used.

6.1.2 Data Obtained from Officials (Questionnaire 1):

Distribution of respondents by age:

Table 6.2: Distribution of Respondents by Age (n = 35)

Age group	Frequency	Percentage (%)
21 – 30	4	11%
31 – 40	23	66%
41 – 50	6	17%
51 – 60	2	6%

From the above distribution we find that most of the respondents (66%) fall in the age group of 31 to 40 years.

Logistics, Skill and Usage Level of Respondents:

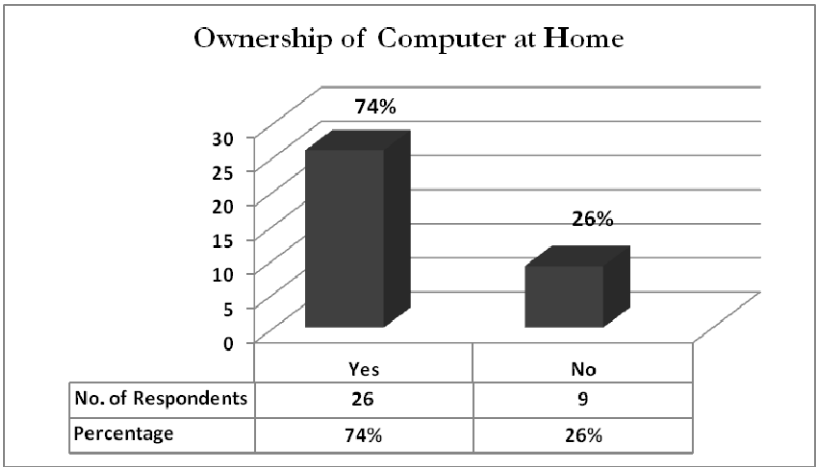

Figure 6.1: Ownership of Computer at Home (n = 35)

From figure 6.1 it is clear that 74% of the respondents have computer at home for their personal use.

According to the assessment of the respondents themselves about their comfort level in using computer, the response is quite mixed. Interestingly enough the maximum number of respondents (34%) rate themselves as 'very fluent' in using computer. The distribution is given in Table 6.3:

Table 6.3: Fluency of Respondents in Computer Use (n = 35)

Fluency in Computer Use	Frequency	Percentage (%)
Not Fluent	4	11%
Moderately Fluent	10	29%
Fluent	9	26%
Very Fluent	12	34%

It is interesting to observe the computer fluency along with the age of the respondents. Table 6.4 displays the matrix of age vs. computer fluency. Observation of the matrix reveals that 3 of the youngest respondents are 'very fluent' in using computer and another 1 of them is 'fluent'. In total 21 of the respondents are either 'fluent' or 'very fluent' and 17 of them are below 40 years of age. This implies that people of lower age tend to have better computer usage fluency.

Table 6.4: Computer Fluency vs. Age Group Matrix (n=35)

Fluency in Computer Use/ Age Group	21-30	31-40	41-50	51-60
Not Fluent	0	**1**	**2**	**1**
Moderately Fluent	0	**9**	**1**	0
Fluent	**1**	**6**	**2**	0
Very Fluent	**3**	**7**	**2**	0

In terms of access to computer at the office, the scenario is pretty ordinary. 31% of the respondents do NOT have access to computer at the workplace. Interestingly enough, of those who have access to computer, majority (26% of total respondents) share the computer among 3 persons. The computer sharing pattern is depicted in Figure 6.2.

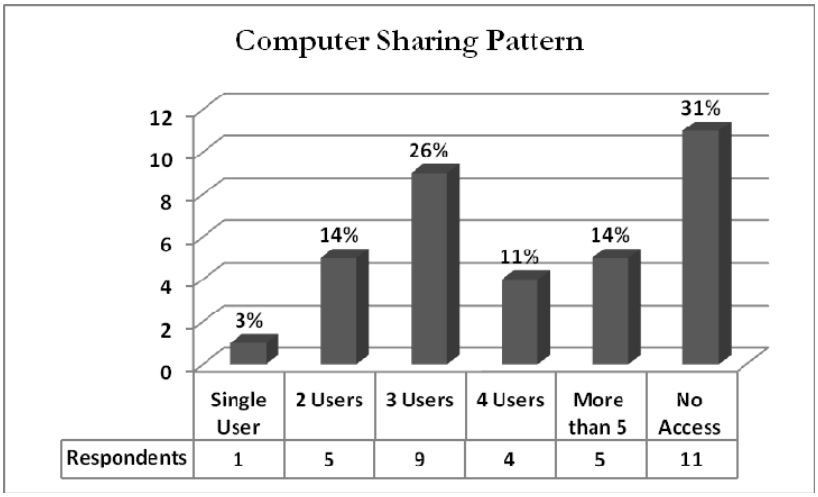

Figure 6.2: Computer Ownership and Sharing Pattern at Office (n = 35)

Attempt to assess the computer usage frequency of the respondents is accompanied by a finding that majority (31%) of the respondents do not use computer for official purpose 'Almost Everyday' whereas 26% of them use minimum once everyday and 23% use computer almost everyday. It is notable that 11% of the respondents never use computer for official purpose. The computer usage frequency is shown below with a pie chart (Figure 6.3).

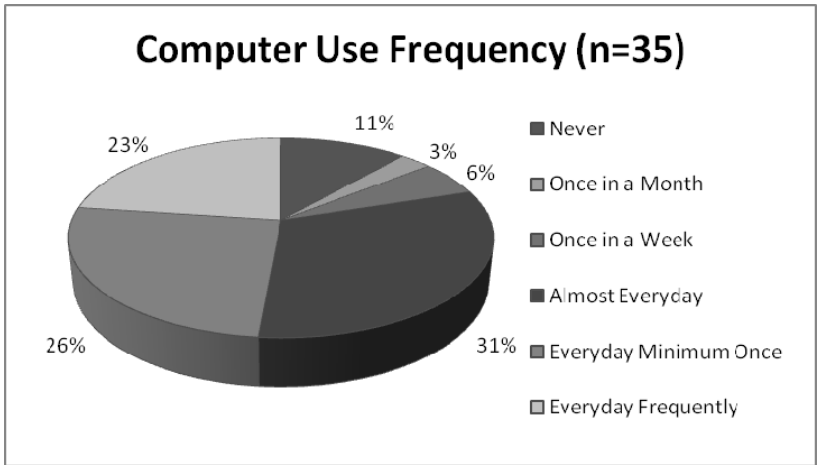

Figure 6.3: Frequency of Computer Use (n = 35)

To show a clearer picture about the daily computer usage, the primary data (Table 6.5) reveals that 37% of the respondents use computer only for 30 minutes to 1 hour. The next big share (29%) indicates daily computer usage of less than 30 minutes which, of course, includes NO usage.

Table 6.5: Daily Computer Usage Pattern (n = 35)

Daily Computer Usage	Frequency	Percentage
Less than 30 Minutes	10	29%
30 Min to 1 hour	13	37%
1 hour to 2 hours	6	17%
2 hours to 4 hours	4	11%
More than 4 hours	2	6%

Availability of internet connection at home has a pretty balanced scenario. 51% (18 respondents) have internet connection at home whereas remaining 49% (17 respondents) do not have internet access at home.

From the respondents it was obviously known that internet is available at office premises although 37% of the respondents do not have internet access at their working terminal. However, the assessment about the speed of internet reveals that the users are more or less satisfied as 73% of the respondents term the internet speed as ‘moderate’. This is described in Figure 6.4.

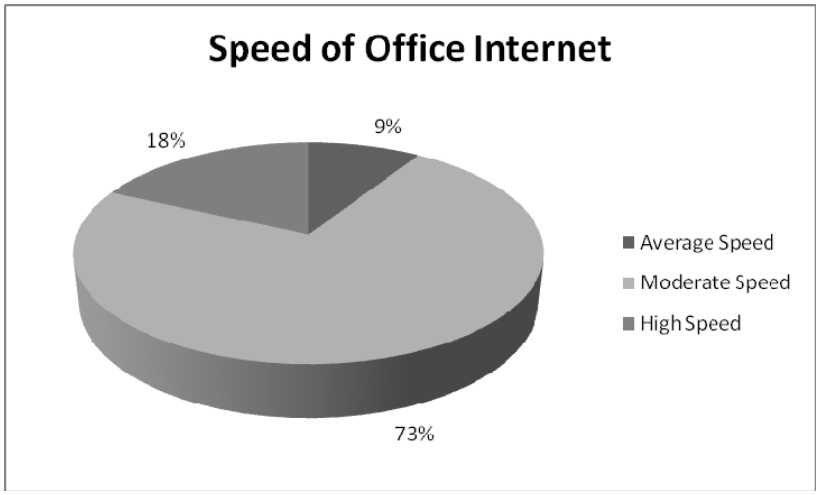

Figure 6.4: Assessment about Office Internet Speed

While the speed of office internet connection is satisfactory, the internet usage frequency for official purpose is rather alarming. 43% of the respondents said that they NEVER use internet for official purpose. Figure 6.5 describes the internet usage pattern of the respondents for official purpose.

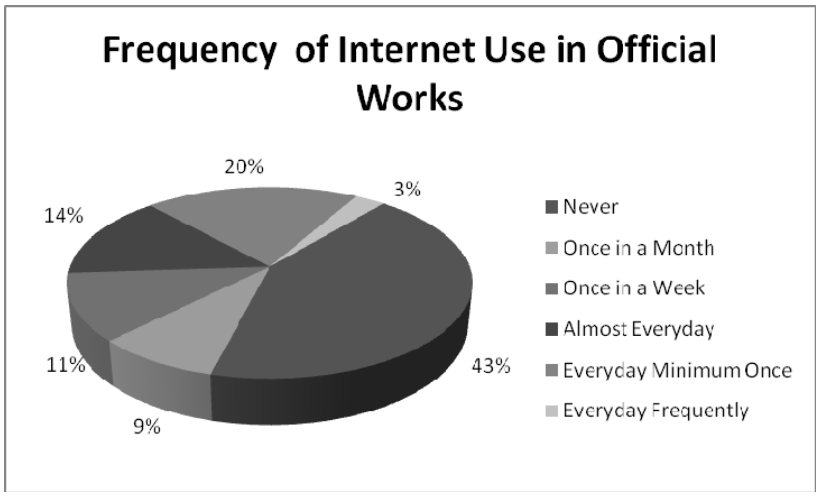

Figure 6.5: Frequency of Internet Use in Official Works (n=35)

In case of e-mail usage, it was found that 37% of the respondents do not have personal e-mail address. More importantly 97% of the respondents do not have any official e-mail address. As a matter of fact, the 3% respondent having official e-mail address amounts to a single person, i.e., the Deputy Commissioner. It is a significant piece of information that only the office head has an official electronic identity in the form of e-mail address. Quite presumably on the basis of earlier findings, the 60% of the respondents NEVER uses e-

mail for official purpose. Those who use e-mail have to share the official e-mail account of the Deputy Commissioner.

The respondents' exposure to Information and Communication Technology (ICT) related training was found to be as less as 23% (9 respondents) only. Even more importantly, of those 26%, 62.5% (5 respondents) termed their level of training as 'elementary'. 25% of them (2 respondents) termed it as 'mid-level'. The training scenario is depicted in Figure 6.6. The content of the trainings, according to the respondents, included very fundamentals of computer operation accompanied by basics of Microsoft Office applications, MS Word in particular.

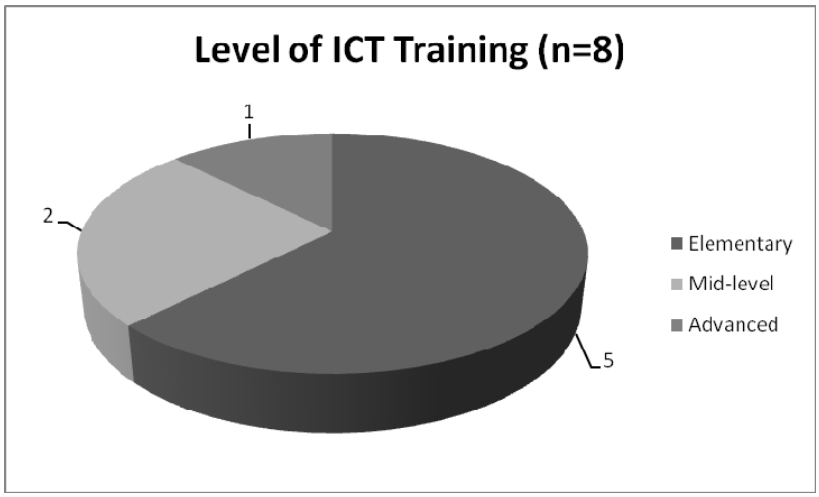

Figure 6.6: Level of ICT Training of the Respondents (n=8; 26% of 35 respondents)

Regulatory Aspect of E-governance:

Majority (80%) of the respondents are unaware of any ICT related laws, rules or regulations. The respondents' perception about whether they are enforced to use ICT by any law, rules or regulations is noteworthy. 91% of the respondents feel that they are not enforced by any such law or regulation to use ICT tools and techniques. Their opinion regarding the adequacy of ICT related laws, rules and regulations is also significant. 60% of the respondents believe that the existing regulatory framework is 'not sufficient' whereas 23% of them opined it to be 'very insufficient'. The overall picture about the perception is shown in Figure 6.7.

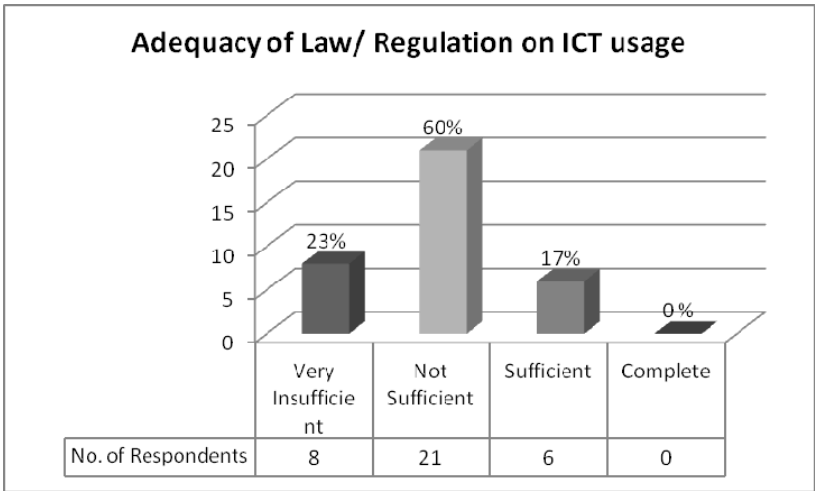

Figure 6.7: Opinion about Adequacy of ICT Law/ Rules/ Regulations (n=35)

Incentive/ Motivational Aspect of ICT Expertise:

To enquire about the incentive provision as well as any motivational schemes, three specific questions were included in the questionnaire. The first two questions were about any possible 'financial benefit' and 'other type of benefit' for the officials having ICT expertise. The respondents were 100% unanimous on these two issues, revealing that there is no such provision. However, in case of the third question, that enquired whether there is any positive impact of ICT expertise on the promotional prospect of the concerned officials, the finding is quite interesting.

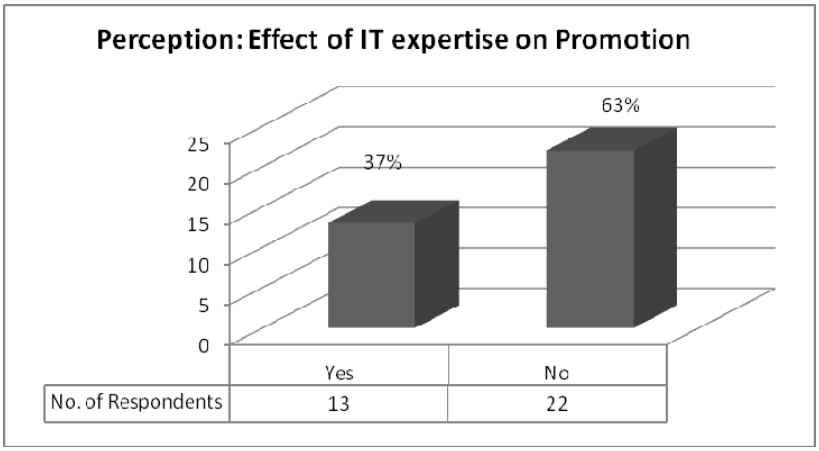

Figure 6.8: Perception about Effect of ICT expertise on Promotion Prospect (n=35)

As depicted in Figure 6.8, a significant 37% has a perception that any incumbent's ICT expertise leads to a positive impact on his/her promotional prospects. This finding is

noteworthy because, in case of promotion, according to existing rules and regulations, there is no such provision that ICT expertise will have a direct influence. The response may have been so because of indirect influence in Annual Confidential Report (ACR) which is one of the factors considered in case of promotion.

Another significant finding is about the general evaluation mechanism of ICT expertise. In this case, 69% of the total respondents opined that ICT expertise is evaluated 'verbally along with additional work load'. 17% told that it is not evaluated at all.

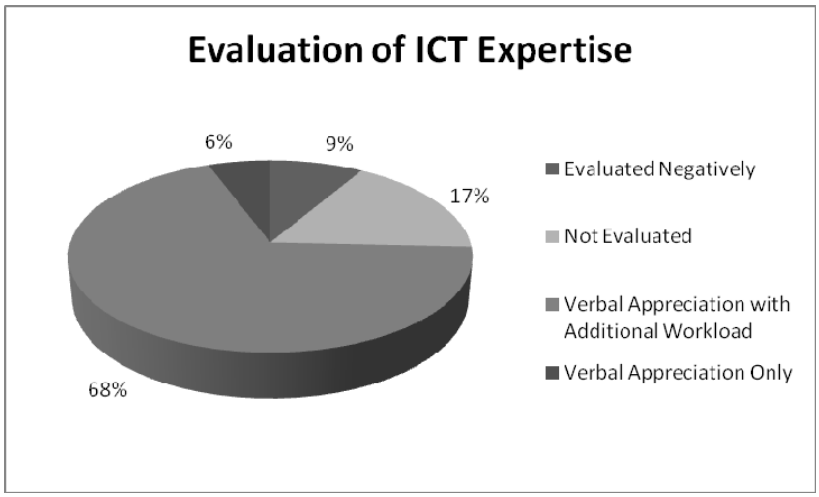

Figure 6.9: Opinion regarding Evaluation of Officials' ICT Expertise (n=35)

Service Aspect of E-governance Preparedness:

As regards to the extent of services provided electronically wherever possible, the respondents were asked whether they do have any provision of service through the official website. 86% of the respondents told that they have no such service provision. The remaining 14% respondents mentioned some of the services provided through the website. The superset of mentioned services includes 'Daily Activity Information', 'Submission of Forms', 'Internet Service', 'Notice', 'Resolution', 'Complaint', 'Chalan Form', 'Vendorship List', 'Meeting Resolution' etc.

The responses about the services provided through website literally made another question redundant which enquired about availability of forms/ reports/ notices at the website. Actually the services mentioned in response to the first question are nothing but static forms and reports to be viewed by service seekers.

This fact is further validated by the perception of the respondents about utilization of available ICT facilities. Majority of the respondents (51%) opined that the utilization level is 'Low' whereas only 14% mentioned it to be 'High'. The opinion is described by Figure 6.10.

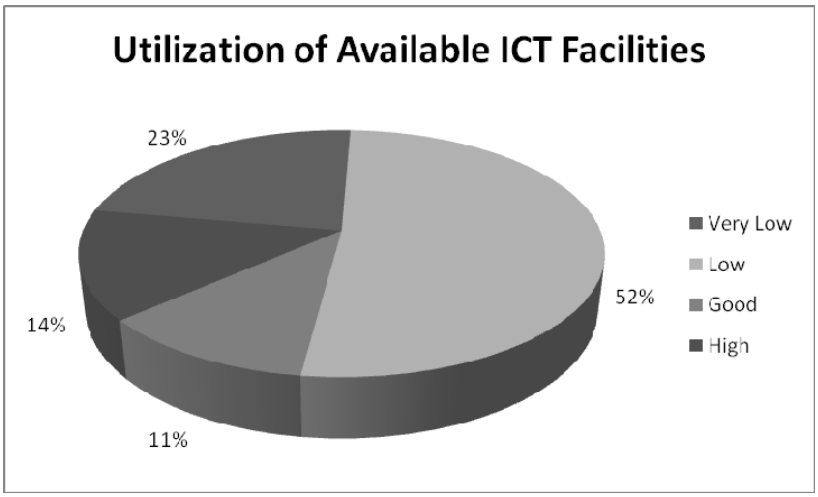

Figure 6.10: Utilization of Available ICT Facilities (n=35)

Holistic Picture of E-governance Preparedness:

Before going to the perception of the officials about the overall preparedness in terms of e-governance, one very important issue is mentionable. This is about the information of load shedding in the study area during office hours. 40% of the respondents think that the daily load shedding during office hours is about 2 to 3 hours whereas another 40% opine it to be 3 to 4 hours. The response is graphically presented in Figure 6.11.

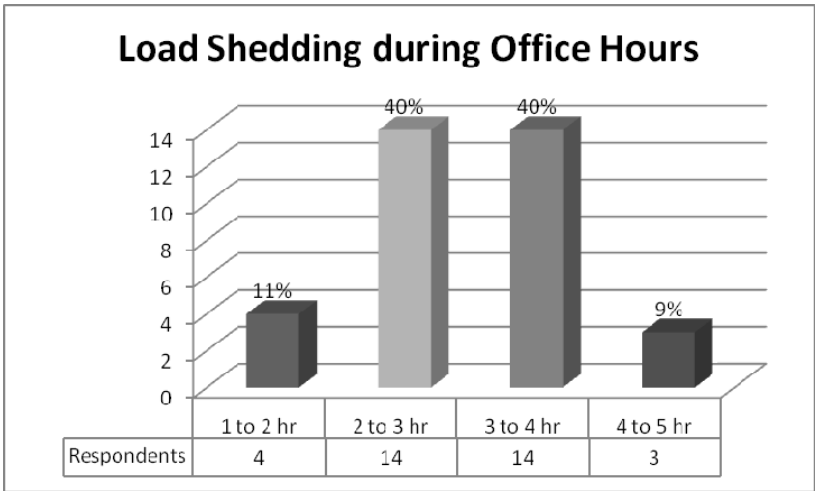

Figure 6.11: Duration of Load Shedding during Office Hours (n=35)

Considering the arithmetic mean to be the duration for each slot (i.e., 1.5 hours for 1 to 2 hr, 2.5 hours for 2 to 3 hours and so on) the average load shedding time is calculated to be 2.96 hours daily during office hours.

Lastly for the respondents' opinion about the overall e-governance preparedness of the office, the responses ranked the preparedness on a scale from 0 to 10. The responses are shown in a bar graph (Figure 6.12).

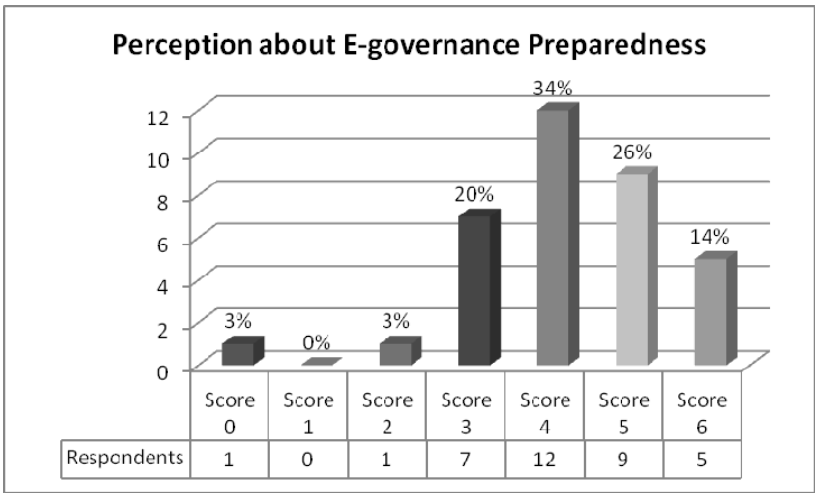

Figure 6.12: Perception about E-governance Preparedness (n = 35)

The average grading of the respondents is calculated to be 4.17 (out of 10), which indicates that the officials themselves do not rank the office's e-governance preparedness very high.

The respondents also gave their opinion about possible hindrances to e-governance implementation. The most highly rated cause was 'weakness of policy and regulatory framework' which was mentioned as one of the causes by 83% of the respondents. The second highest rank was to 'lack of infrastructure and logistics' having mentioned by 77% of the respondents. The other responses are mentioned in Figure 6.13.

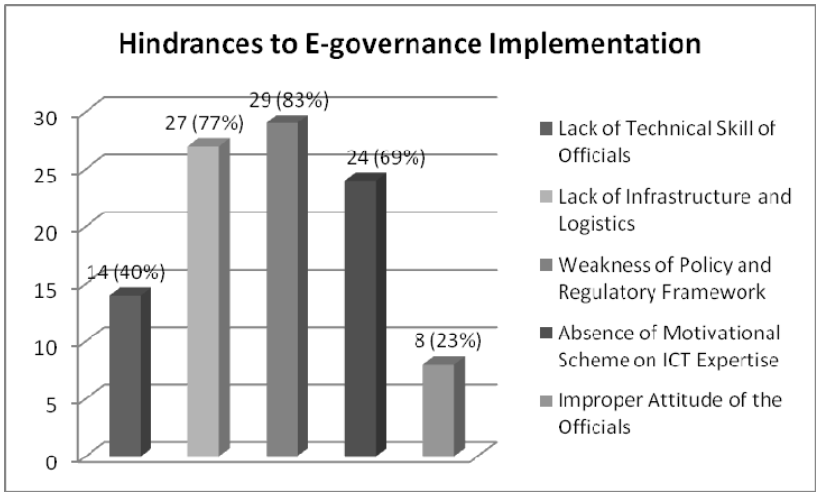

Figure 6.13: Perception about Hindrances to E-governance Implementation

6.1.3 Data Obtained from Citizens (Questionnaire 2):

A total of 30 service seekers were surveyed with the Questionnaire 2 to obtain some sort of citizen's perspective about the e-governance preparedness of the office under consideration. The distribution of the respondents according to their desired services is depicted in Figure 6.14.

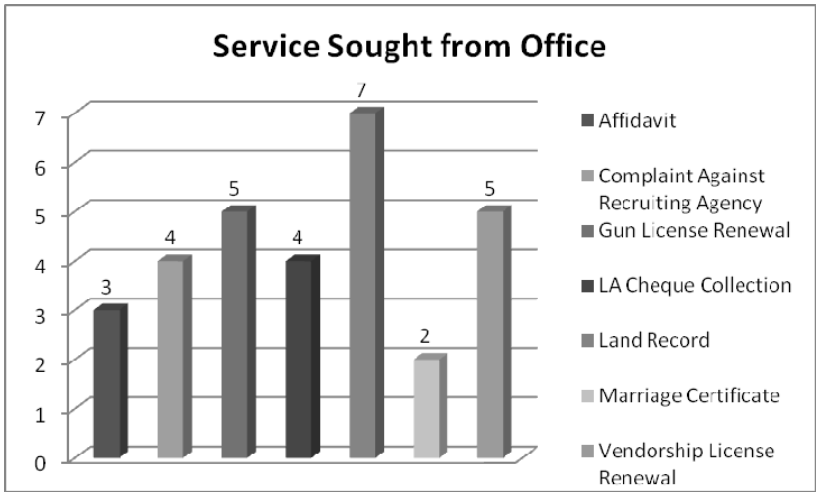

Figure 6.14: Distribution of Respondents by Service Sought (n=30)

100% of the respondents told that no ICT provision was used to provide the service. While asked about whether ICT tools could be used for the desired service, 67% of them opined in favour of possible ICT use. In answer to the query that whether any form/ report/ notice related to the desired service is available at the website, 57% of the respondents told that they had no idea, 43% told that no document is available. The scenario is given below through Figure 6.15.

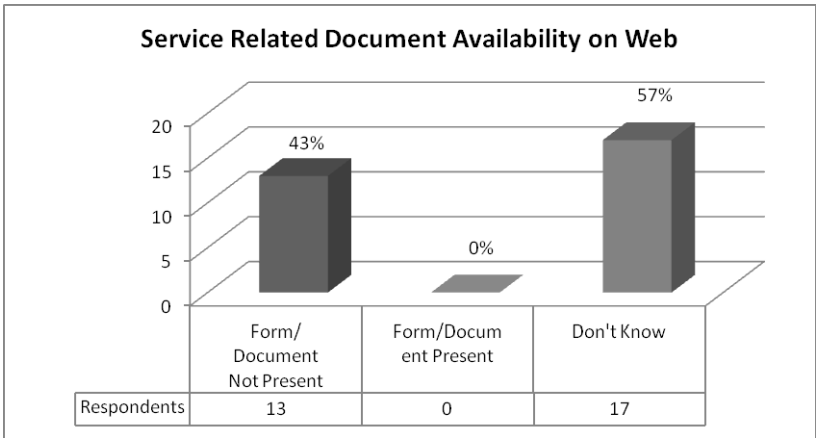

Figure 6.15: Availability of Service related Document on Website (n = 30)

While evaluating the officers' tendency to use ICT in providing service, majority (47%) of the respondents opined that the quality of such tendency is 'below average'. None of the respondents rated 'excellent' in this regard whereas another significant 40% rated the tendency to be of 'average' quality. Figure 6.16 details the summary of the evaluation.

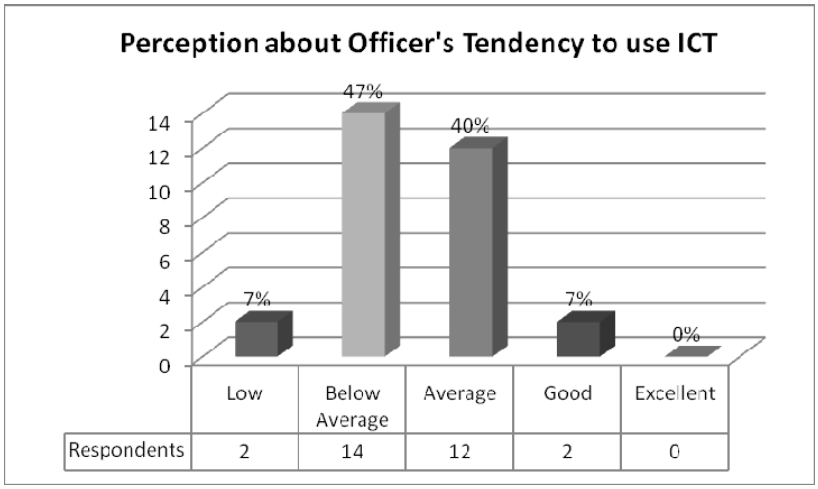

Figure 6.16: Evaluation of Officers' Tendency to Use ICT (n = 30)

The citizens' perception about the officials' ICT expertise is almost a perfect normal distribution. 53% of the respondents rate this as 'average', 27% rate as 'below average' whereas 20% rate as 'good'. The frequency distribution is graphically presented by Figure 6.17.

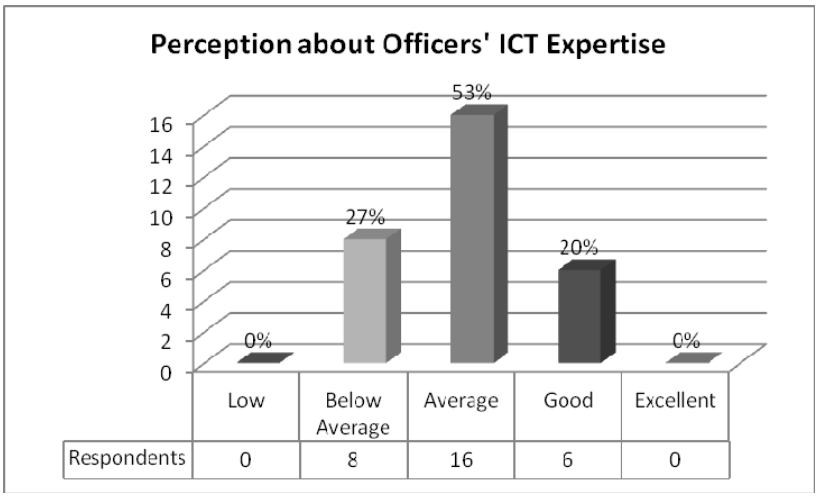

Figure 6.17: Perception about Officers' ICT Expertise (n=30)

About the infrastructural and logistics support of the office to implement e-governance successfully, 47% respondents rated as 'average' whereas another 47% rated as 'below average'. The response is portrayed through Figure 6.18.

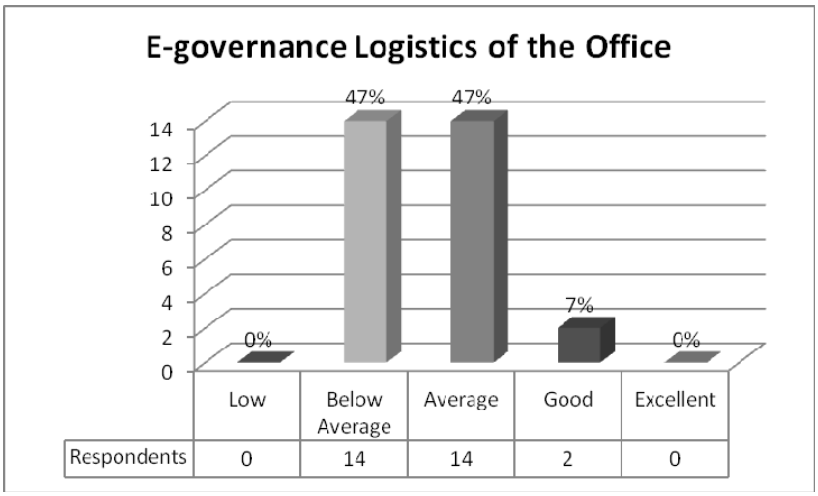

Figure 6.18: Perception about E-governance Logistics of the Office (n = 30)

While evaluating the utilization of the available ICT facilities at the office, the respondents were almost equally divided. 37% rated the utilization as 'low', 33% rated as 'average', 30% rated as 'good'. The division was proven to be unequal in the rating as

'high' as NONE of the respondents rated so. Table 6.6 describes the facts about the evaluation.

Table 6.6: Perception about Utilization of Available ICT Facilities (n = 30)

Utilization of ICT Facilities	Frequency	Percentage (%)
Low	11	37%
Average	10	33%
Good	9	30%
High	0	0%

To grade the overall e-governance preparedness, the citizens rated on a scale from 0 to 10. Some 30% graded the preparedness with a score of 3 while another 30% with a score of 4. The detail is provided in Table 6.7. The average score given by the citizens in case of overall preparedness is calculated to be 3.3 (out of 10).

Table 6.7: Perception about Overall E-governance Preparedness (n = 30)

Score (From 0 to 10)	Frequency	Percentage (%)
Score 0	1	3%
Score 1	1	3%
Score 2	5	17%
Score 3	9	30%
Score 4	9	30%
Score 5	5	7%
Score 6	0	0%
Score 7	0	0%
Score 8	0	0%
Score 9	0	0%
Score 10	0	0%

The respondents also gave their opinion about possible hindrances to e-governance implementation. The most highly rated cause was 'lack of infrastructure and logistics' which was mentioned as one of the causes by 80% of the respondents. The second highest rank was to 'weakness of policy and regulatory framework' having mentioned by 77% of the respondents. Figure 6.19 summarizes all the opinions.

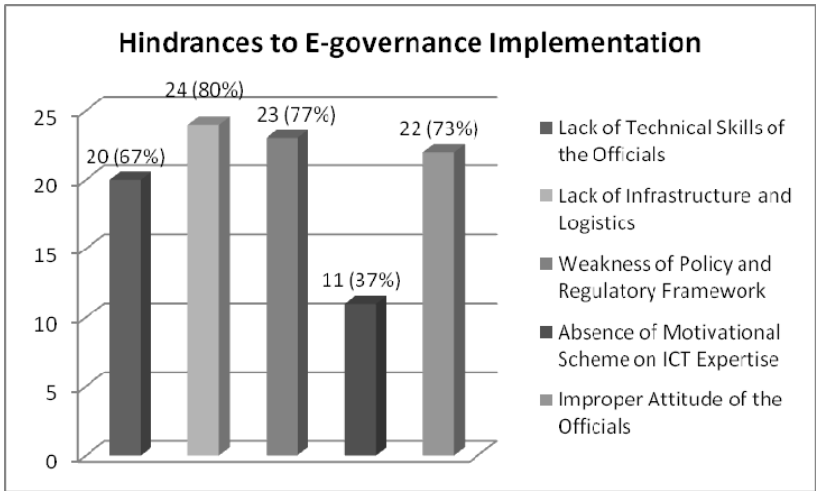

Figure 6.19: Perception about Hindrances to E-governance Implementation (n=30)

6.2 Analysis of the Data

This section analyzes the primary data obtained from the questionnaire survey with reference to United Nations' Five Stage Model comprising of five stages namely *'Emerging', 'Enhanced', 'Interactive', 'Transactional'* and *'Connected'*. To assess the e-governance preparedness of the study area (Office of the Deputy Commissioner, Dhaka) the findings will be compared with the key features of various stages of the aforementioned model. For the purpose of comfortable comparison, the main features of the UN model are listed in Table 6.8.

Table 6.8: Key Features of Various Stages of UN Model of E-governance Maturity

Emerging	Web presence is established through official website. Information is limited, basic and static.
Enhanced	Increased information with more regular update. Dynamic nature of Content.
Interactive	Users can download forms, contact officials, and make appointments and requests.
Transactional	Users can actually pay for services or conduct financial transactions online.
Connected	Government as a connected entity to the needs of its citizens by developing an integrated back office infrastructure featuring horizontal and vertical connection among government agencies and with citizens.

6.2.1 Quantitative Analysis with Reference to Analytical Framework

This section attempts to evaluate the status of e-governance preparedness of the Office of the Deputy Commissioner, Dhaka in a quantitative manner with reference to the independent variables of the analytical framework and the measurable indicators associated with them. Although there is no quantitative benchmark to assess the preparedness as far as the UN's five stage model is concerned, it would be useful to validate the qualitative assessment about the findings and to have a holistic picture of the preparedness level.

The quantitative analysis is done by giving equal weight to all the indicators and calculating the scores obtained on the basis of the primary data obtained, both from the officials and the citizens. The scores are added up to obtain a total score of 8.18 out of 17 (Table 6.9).

Table 6.9: Quantitative Evaluation as regards to Independent Variables and Indicators.

SL.	Independent Variables	Indicators	Score Obtained
1.	Technical Skill (Total Point 5)	Training and the contents	2.79
		Ownership of Computer for personal use	
		Fluency of Computer Operation	
		Internet connection at home	
		Personal e-mail	
2.	Infrastructure and Logistic Support (Total Point 4)	Power Situation	2.22
		Computer and Accessories at workplace	
		Internet connection at workplace	
		Internet Speed at office	

SL.	Independent Variables	Indicators	Score Obtained
3.	Policy and Legal Framework (Total Point 2)	Opinion of Officials about Adequacy of ICT related Laws/ Rules/ Regulations	1.91
		Opinion of Citizens about Adequacy of ICT related Laws/ Rules/ Regulations	
4.	Incentive on ICT Expertise (Total Point 3)	Monetary benefit package on use of ICT at office	0.90
		Promotion prospect	
		Intangible benefits (like appreciation etc.)	
5.	Attitude (Total Point 3)	Citizens' Perception about Attitude	1.31
		Utilization of Existing ICT Facilities (Officials' Perspective)	
		Utilization of Existing ICT Facilities (Citizens' Perspective)	
		Total (Out of 17)	8.18

Now converting the score of 8.18 on a scale of 10, it is found that the obtained score is 4.81 [Conversion of Score (Out of 10) = (8.18×10)/17 = 4.81]. It is interesting to observe that this score is higher than both the values of ratings given by the officials and the citizens, the prior being 4.17 and the later being 3.3, both being out of a total score of 10.

As mentioned earlier, there is no quantitative benchmark for assessing the e-governance preparedness. Therefore a score of 4.81, or for that matter 4.17 or 3.3, does not conclusively indicate any specific level of preparedness as far as the UN's five stage model is concerned. However, the quantitative assessment rather provides clues to judge the preparedness level qualitatively. In this case, possibly the most intuitive conclusion is the office under consideration has not yet reached the halfway mark of what one may call the ultimate preparedness level in terms of e-governance, which is the 'connected' stage of the UN's five stage model for the purpose of this study.

6.2.2 Correlation between Dependent and Independent Variable(s)

Bivariate Pearson's correlation analysis has been performed to identify whether there is any significant correlation between the independent and dependent variables. As mentioned earlier, for this study the dependent variable was 'E-governance Preparedness' and its dependency on the five independent variables have been examined with the help of SPSS. The results are shown in Table 6.10.

Table 6.10: Relationship between Dependent and Independent Variables

Independent Variables	Correlation (r)
Technical Skill	0.476**
Infrastructure and Logistic Support	0.626**
Policy and Legal Framework	0.674**
Incentive on ICT Expertise	0.126**
Attitude	0.411**

**** Correlation is significant at the 0.01 level**

It is evident from the above mentioned table that 'Policy and Legal Framework' is the independent variable which have the highest correlation (Pearson's correlation, r = 0.674) with the e-governance preparedness level according to the responses of the respondents. The second strongest factor is 'Infrastructure and Logistic Support' having a correlation coefficient (r) of 0.626. This finding obtained from the Pearson's bivariate correlation analysis is very much compliant with the direct responses of both types of the respondents. It is interesting to observe that incentive on ICT expertise has the minimum influence on the e-governance preparedness (r = 0.126). 'Technical Skill' has a reasonably moderate influence in this respect.

6.2.2 Qualitative Analysis of the Data Obtained

From the primary data obtained it is found that the office under consideration has its web presence through the official website http://www.dcdhaka.gov.bd. Observation reveals

that it provides significant amount of static data. So, it is evident that the office has definitely passed the criteria for the 'emerging' stage.

Now to compare with the benchmark of 'enhanced' stage, it is noteworthy that some the respondents mentioned about complaint/suggestion mechanism through website which is also validated by observation of the website. Therefore, it can be concluded the office has passed the criteria for 'enhanced' stage.

Evaluating against the third stage, i.e., the 'interactive' stage is quite intriguing because of some contradiction of gathered data from the officials and the citizen. Only 14% of the officials claimed that the website has forms/ documents/ reports/ notices regarding their service. The percentage is pretty low; even if the claim is correct. However, survey to the citizens reveals that 43% of them claimed unavailability of such documents whereas 57% submitted to be ignorant of the issue. Hence observation, even more important in this case, reveals that the website does not host any forms on its own, rather have link to the national website for forms (http://www.forms.gov.bd). It also has got the resolution of the 'Monthly Coordination Meeting' but paradoxically the resolution is of the meeting held in November 2010 (accessed on 11 May 2011). So it is evident that it is not updated as expected. Of course the website does have notice of some important events, meetings etc. Therefore, it can be concluded that the office does not qualify all the criteria of the 'interactive' stage of e-governance and pass partially in this regard.

Although further evaluation seems unnecessary, it is worth identifying purposefully that the website does not provide any transactional services whereby the citizens can pay their various bills, payments etc. As a result, one can fairly conclude that the office under consideration have not achieved any part of the 'transactional' stage of e-governance, let alone the 'connected' stage. To conclude about the assessment of the e-governance maturity of Office of the Deputy Commissioner, Dhaka it can be argued that the office is at the transition of the two stages of e-governance namely 'enhanced' and 'interactive'. This is to mean that some elementary attributes of 'interactive' stage is found to be present in the area of the study while the essence of the stage is grossly absent. This implies that the office under consideration is trying to catch up with the 'interactive' stage but yet has a long way to achieve it.

CHAPTER SEVEN: CONCLUSION AND POLICY IMPLICATIONS

7.1 Introduction

The objective of this chapter is to draw some conclusions about the study according to the findings of data analysis with reference to the research objectives and research questions. The first of the two research questions enquires about the preparedness level of Office of the Deputy Commissioner, Dhaka in terms of e-governance. The second research question tried to identify possible hindrances to implement e-governance in the study area. Therefore along with the concluding remarks, some policy implications are also discussed in connection with the hindrances to e-governance implementation.

7.2 General Findings

Respondents of this study, both the officials and the citizens (service seekers) have agreed to a great extent about the overall preparedness in terms of e-governance. Both the strata opined that the overall preparedness is quite low. Another significant concordance between their opinions is their perception about hindrances to e-governance implementation. In both cases the two most significant factors hindering e-governance implementation are 'Lack of Infrastructure and Logistic Support' and 'Weakness of Policy and Regulatory Framework'.

7.3 Specific Findings

The first research question of the study is about the level of preparedness of bureaucracy in terms of e-governance at the Office of the Deputy Commissioner, Dhaka. To answer this question, the primary data were analyzed in line with the analytical framework that identified five independent variables namely 'Technical Skill', 'Infrastructure and Logistic Support', 'Policy and Regulatory Framework', 'Incentive on ICT Usage' and 'Attitude (of the officials)'.

The study reveals that the technical skill level of the officials working at the office under consideration is reasonably low. They do not have enough training and orientation of ICT and relevant matters; neither personally nor institutionally. Although e-governance is not all about computers it is undeniable that expertise in computer operation is one of the

most significant factors in this regard. The expertise level of the officials was not found to be up to the mark. Even some basic operational orientation as that of internet or personal e-mail is also very poor. Therefore, in terms of technical skill or expertise, the officials working at the Office of the Deputy Commissioner, Dhaka are not very well prepared for implementing e-governance.

As far as infrastructure and logistic support is concerned, the office concerned again does not up to expectation. When it comes to ownership to computer at work place, it was found that none of the respondents had a computer for him/ her only. They have to share computers and on an average around three persons share the same computer. A significant percentage of the officials do not have internet connection at office. The speed of office internet was found to be more or less satisfactory to those who have internet connection at office. However, this satisfaction might not be genuine if we consider the amount of service/ or office work performed with the help of internet. As a matter of fact, the extent of internet usage for official work is so meager that the satisfaction about internet speed possibly does not mean much. Above all, the power situation as indicated by the magnitude of 'load-shedding' is really miserable which implies that the overall infrastructural support is rather despairing.

Each and every implementation is inseparably related with the concerned policy and success of the implementation depends on the policy heavily. The more comprehensive, far-reaching the policy is, the more the implementation is likely to be successful. E-governance implementation is no exception. At present, the government's broader policy regarding e-governance seems to be congenial, but when it comes to specific rules, regulations and guidelines for implementation, it appears that they are nowhere near satisfactory. The provisions of e-governance are not obligatory for the officials in most of the cases. The regulations are insufficient so as to compel the government officials to adopt e-governance tools and techniques. One possible reason behind this inadequacy is the deficiency in infrastructural support that the government can offer. After all, it is not possible for the government to impose ICT utilization without providing necessary infrastructural backup. Whatever be the reason, the overall policy and regulatory framework regarding implementation of e-governance in Bangladesh is much below the expectation.

Incentives and motivational aspects are very important in case of any implementation and they become even more important when the activities cannot be enforced by rules and regulations for good or bad reasons. In case of e-governance implementation, as mentioned above, the regulations are not obligatory in many cases. Therefore, to make the implementation successful by eliciting voluntary efforts from the officials, incentives are supposed to play a vital role. Within the scope of this study it was found that there is no incentive mechanism that can motivate the officials to give some extra effort to make e-governance implementation successful. Expertise on ICT does not have any direct positive impact on the promotional prospect of the officials and even no additional (monetary or non-monetary) benefit is offered to the individuals giving special efforts in e-governance initiatives. Therefore, it can be concluded that the incentive mechanism to strengthen e-governance endeavor is very insufficient.

Whenever the matter of any implementation comes, the attitude of the implementing personnel matters a lot. Positive and congenial attitude has the potential of overcoming many difficulties and resource constraints. In the above discussion, it was evident that e-governance implementation in Bangladesh suffers from numerous constraints including technical skills, regulatory framework and various resources. Surmounting these hindrances is not an easy task, but proper 'attitude' can do a lot in this regard. Unfortunately the scenario found in this study does not sign good prospect for the implementation of e-governance.

7.4 Conclusion

E-governance is the demand of the time in this era of technological excellence and even a developing country like Bangladesh is no exception to this phenomenon. In course of this study it has been observed that some sort of awareness about e-governance, ICT opportunities etc. has been present which was not there even a few years back. Whether the awareness is good enough is different issue but there is absolutely no doubt that people in general have begun to realize the importance of ICT. Even the common people who do not have much formal education, let alone technical skills, have started to recognize the importance of e-governance in ensuring good governance as well as welfare of people. The same thing is true for the officials working for the government; irrespective of their competence level in information technology and electronic governance system. Although the effort may not always be present, but government

officials do admit the necessity of e-governance implementation. There may be some sort of pessimism among the officials, including the high-ups, about the success of the ICT initiatives due to different reasons; but they are consentient with the enlightened civilians about the necessity of e-governance.

Although the awareness of the government officials about the indispensability of e-governance is felt much stronger than before, the preparedness level does not show significant improvement, both at the individual and institutional level. At individual level the possible reasons might include lack of technological orientation (which in most cases induces fear of technology) and improper attitude towards change. At the institutional level the reasons behind low preparedness are even more serious which includes insufficiency of appropriate legal and regulatory framework, paucity of logistics and infrastructural support, and inadequacy of motivational mechanism for the skilled personnel.

7.5 Policy Implications

This section discusses the most important policy implications along the line of what needs to be done in order to overcome the hindrances to e-governance implementation based on the major findings of the study. At this juncture, a few recommendations are made based on the responses of the officials, citizens and the interviewees.

i. Infrastructure and Logistics:

- First and foremost, the government should concentrate on developing and improving the infrastructures that are required for e-governance implementation. Power situation is one such thrust area that needs to be taken care of with utmost priority.
- Apart from solving the electricity problem, the nationwide internet infrastructure needs to be seriously considered. At present, Bangladesh is connected to only one submarine cable. The government should take necessary actions to get connected with an alternative submarine cable with a view to ensuring ceaseless internet connectivity.

- Regulations regarding the allocation of national internet bandwidth need to be revisited so that common people can have access to internet at a much less cost. This would ensure greater internet penetration throughout the country which will create a positive pressure on the government to provide online services as soon and as much as possible.

ii. Policy and Regulatory Framework

- Laws, rules and regulations must be revised in order to accommodate the growing demand of technological advancements. Once the infrastructure overhaul is in progress, the government should go for more obligatory rules and regulations for the government officials to enhance the e-governance facilities in service delivery. The rules regarding ICT usage must not remain optional for long.

- The legal issues of 'digital signature' need to be resolved as soon as possible. Otherwise automation of most of the government services including office management will not be possible. Parallel efforts are required to resolve the technical difficulties as well as to revise relevant laws, acts, regulations etc.

iii. Development of Government Officials

- Government has various kinds of officials and of various age groups with different responsibilities. Their competence level also varies significantly. With the changes in service delivery mechanism of the prospective e-governance scenario, these personnel need to be trained according to their responsibilities.

- The trainings must not be for the sake of training and it should be as purposive as possible. To do that, the contents of the training need to be selected very cautiously.

- The government officials may be offered some sort of incentive package for additional contribution in e-governance implementation at least for the transition period. This is most likely to have a positive impact on the attitude of the concerned officials.

Above all, a whole hearted effort on the part of the government is necessary to make the e-governance endeavor a true success. Another important aspect of this implementation is

proper coordination among various agencies. Government should take care so that different organizations do not duplicate e-governance endeavors. Such duplication will not only waste valuable resources but also jeopardize the whole effort. For example, if there is a database for all the people of Bangladesh, the Government must ensure that only one database is maintained and all the organizations that require such database share that one. Finally, engaging competent and appropriate private counterparts in e-governance implementation is almost a must for Bangladesh as government does not have that expertise of its own.

REFERENCES:

Aminuzzaman, M. Salahuddin. Introduction to Social Research, Bangladesh Publishers, Dhaka (1991).

Backus, M. (2001) “E-governance in developing countries”. *IICD Research Brief*, Vol. 1. March.

Baum, C. & DiMaio, A. (2000). Gartner’s Four Phases of E-Government Model.

BEI (2010), Realizing the Vision of Digital Bangladesh through e-Government, July 2010 (*www.bei-bd.org/downloadreports/view/48/download accessed on 20 Sep 2010*)

Carter, Lemuria & Bélanger, France. *The utilization of e-government services: citizen trust, innovation and acceptance factors. Info Systems J (2005) 15, 5–25.*

Davis, F. D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly* 13(3): 319–340

Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989), "User acceptance of computer technology: A comparison of two theoretical models", *Management Science* 35: 982–1003

Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International Journal of Human-Computer Studies,* 145, 19-45.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: an introduction to theory and research.* Reading, MA: Addison-Wesley.

Grandon, E., Alshare, O., & Kwan, O. (2005). Factors influencing student intention to adopt online classes: A cross-cultural study. *Journal of Computing Sciences in Colleges, 20*(4), 46–56.

Hoque, M. M. (2009). An Information System Planning Framework for E-Governance in Bangladesh (Unpublished report)

Hoque, S. M. Shah. E-Governance in Bangladesh: A Scrutiny from Citizens' Perspective. Paper presented in Network of Asia-Pacific Schools and Institutes of Public Administration and Governance (NAPSIPAG) Annual Conference 2005

Mahbubul, A. (2007) 'E-Governance: Scope and Implementation Challenges in Bangladesh.' Available at: http://delivery.acm.org/10.1145/1330000/1328108/p246-alam.pdf

Morshed, A. (2007) 'E- governance: Bangladesh perspective'. Available: http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN02625.pdf [accessed 20 Sep 2010].

Mungania, P., & Reio, Jr. T. G. (2005). *If e-learners get there, will they stay? The role of e-learning self-efficacy*. Eric ed492287. Paper presented at the Academy of Human Resource Development International Conference (AHRD), Estes Park, CO, Feb 24–27, 2005, p. 1110–1117 (Symp. 48–2)

Pablo, D Zelinna & Pan, L Shan (2002)**.** A Multi-Disciplinary Analysis of E-governance: Where Do We Start? (Unpublished Report)

Park, S. Y. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Educational Technology & Society*, *12* (3), 150–162.

Robbins, S. P., & Judge, T. A. (2008). Organizational Behavior. In S. P. Robbins, & T. A. Judge, Organizational Behavior (Thirteenth edition).

Schiavo-Ocampo, S. & Sundaram, P. (2001) *To Serve and Preserve: Improving Public Administration in a Competitive World*. Manila, Philippines: Asian Development Bank.

Taifur, S. (2006) 'SICT's Steps Towards Good Governance Through ICTs: E-governance Strategies', Support to ICT Task Force program project (SICT), Ministry of Planning, Government of Bangladesh press.

UN e-Government Survey 2008**.** From e-Government to Connected Governance, New York, 2008.

Valentina, N (2004) ‘E – Government for Developing Countries: Opportunities and Challenges’, *The Electrical Journal on Information Systems in Developing Countries*, EJISDC (2004)18, 1, 1-24.

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences, 27*, 451–481.

Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: toward a unified view. *MIS Quaterly*, 27 (3), 425-478.

বি:দ্র: এই প্রশ্নপত্রে প্রদত্ত উত্তরসমূহ কেবলমাত্র গবেষণার কাজে ব্যবহারের জন্য।

(আপনার সানুগ্রহ সহযোগিতা গবেষণায় মূল্যবান অবদান রাখবে)

পদবী	বয়স	বর্তমান কর্মস্থল (শাখার নাম)

১. আপনার বাসায় নিজস্ব ব্যবহার্য কম্পিউটার আছে কি? ☐ হ্যাঁ ☐ না

২. কম্পিউটার ব্যবহারে আপনি কতটুকু সচ্ছন্দ?

☐অত্যন্ত সচ্ছন্দ ☐ সচ্ছন্দ ☐ চলনসই ☐ সচ্ছন্দ নয়

৩. অফিসে আপনার ব্যবহারের জন্য কোন কম্পিউটার আছে কি? ☐ হ্যাঁ ☐ না

৪. অফিসে আপনার ব্যবহার্য কম্পিউটারটি সাধারণত কতজন ব্যবহার করে থাকেন?

☐কেবল আপনি ☐ ২ জন ☐ ৩ জন ☐ ৪ জন ☐ ৫ জন ☐আরো বেশি ☐প্রযোজ্য নয়

৫. দৈনন্দিন দাপ্তরিক কাজে আপনার কম্পিউটার ব্যবহারের মাত্রা কতটুকু?

☐ প্রতিদিন অধিকাংশ কাজে ☐ প্রতিদিন অন্তত একবার ☐ প্রায় প্রতিদিন ☐ সপ্তাহে একদিন

☐ মাসে একদিন ☐ কখনই প্রয়োজন হয়না ☐ অন্যান্য .....

৬. দৈনন্দিন দাপ্তরিক কাজে আপনি সাধারণত কতক্ষণ কম্পিউটার ব্যবহার করে থাকেন?

☐৩০ মিনিটের কম ☐ ৩০ মি. – ১ ঘন্টা ☐ ১ – ২ ঘন্টা ☐ ২ – ৪ ঘন্টা ☐ আরো অধিক

৭. আপনার বাসায় ইন্টারনেট সংযোগ আছে কি? ☐ হ্যাঁ ☐ না

৮. অফিসে আপনার ব্যবহার্য কম্পিউটারে ইন্টারনেট সংযোগ আছে কি? ☐ হ্যাঁ ☐ না

৯. আপনার অফিসে ব্যবহৃত ইন্টারনেট সংযোগের গতিসীমা কেমন?

☐অত্যন্ত দ্রুতগতিসম্পন্ন ☐ দ্রুতগতিসম্পন্ন ☐ মোটামুটি ☐ ধীরগতির ☐ অত্যন্ত ধীরগতির

☐আরো বেশি ☐প্রযোজ্য নয়

১০. অফিসের কাজে আপনার ইন্টারনেট ব্যবহারের মাত্রা কতটুকু?

☐ প্রতিদিন অধিকাংশ কাজে ☐ প্রতিদিন অন্তত একবার ☐ প্রায় প্রতিদিন ☐ সপ্তাহে একদিন ☐

মাসে একদিন ☐ কখনই প্রয়োজন হয়না ☐ অন্যান্য .....

১১. আপনার কোন ব্যক্তিগত ই- মেইল ঠিকানা (e-mail address) আছে কি? ☐ হ্যাঁ ☐ না

১২. আপনার কোন দাপ্তরিক ই- মেইল ঠিকানা (e-mail address) আছে কি? ☐ হ্যাঁ ☐ না

১৩. দাপ্তরিক প্রয়োজনে আপনার ই- মেইল ব্যবহারের মাত্রা কেমন?

☐ প্রতিদিন অধিকাংশ কাজে ☐ প্রতিদিন অন্তত একবার ☐ প্রায় প্রতিদিন ☐ সপ্তাহে একদিন

☐ মাসে একদিন ☐ কখনই প্রয়োজন হয়না ☐ অন্যান্য .....

১৪. তথ্য- প্রযুক্তি (Information Technology) বিষয়ক আপনার কোন প্রাতিষ্ঠানিক প্রশিক্ষণ আছে কি?

☐ হ্যাঁ ☐ না

১৫. উত্তর হ্যাঁ হলে আপনার প্রশিক্ষণ বিষয়বস্তু (পাঠ্যসূচি) সম্পর্কে আপনার মতামত কী?

☐ প্রাথমিক ☐ মাঝারি মানের ☐ উন্নত

বি:দ্র: এই প্রশ্নপত্রে প্রদত্ত উত্তরসমূহ কেবলমাত্র গবেষণার কাজে ব্যবহারের জন্য।

১৬. উক্ত প্রশিক্ষণের বিষয়বস্তু সমূহ সংক্ষেপে উল্লেখ করুন।

.....

১৭. আপনার প্রশিক্ষণের (সমূহের) পৃষ্ঠপোষকতা কীরূপ ছিল?

☐ ব্যক্তিগত ☐ অফিসিয়াল ☐ উভয় ☐ প্রযোজ্য নয়

১৮. দাপ্তরিক কাজ সম্পাদনে তথ্য- প্রযুক্তি বিষয়ক কোন প্রশিক্ষণ আদৌ প্রয়োজন আছে বলে মনে করেন কি?

☐ হ্যাঁ ☐ না

১৯. তথ্য- প্রযুক্তি ব্যবহার বিষয়ক কোন আইন বা বিধির সাথে কি আপনি পরিচিত? ☐ হ্যাঁ ☐ না

২০. কোন বিদ্যমান আইন/ বিধির আওতায় আপনি কি কম্পিউটার/ ইন্টারনেট/ ই- মেইল ব্যবহারে বাধ্য বা প্রভাবিত হয়েছেন? ☐ হ্যাঁ ☐ না

২১. তথ্য- প্রযুক্তি সংক্রান্ত বিদ্যমান আইন, বিধি বা নির্দেশনা সম্বন্ধে আপনার মতামত কি?

☐ পরিপূর্ণ ☐ যথেষ্ট ☐ অপর্যাপ্ত ☐ অত্যন্ত অপর্যাপ্ত

২২. তথ্য- প্রযুক্তি ব্যবহারে দক্ষতার জন্য আপনাকে বিশেষ কোন আর্থিক সুবিধা দেয়া হয়? ☐ হ্যাঁ ☐ না

২৩. তথ্য- প্রযুক্তি ব্যবহারে দক্ষতার জন্য আপনাকে অন্য কোন ধরণের সুবিধা দেয়া হয়? ☐ হ্যাঁ ☐ না

২৪. তথ্য- প্রযুক্তি ব্যবহারে দক্ষতা কর্মকর্তা/ কর্মচারীদের পদোন্নতিতে কোন ইতিবাচক ভূমিকা রাখে কি?

☐ হ্যাঁ ☐ না

২৫. তথ্য- প্রযুক্তি ব্যবহারে দক্ষতা কিভাবে মূল্যায়িত হয় বলে আপনি মনে করেন?

☐ কেবল মৌখিক প্রশংসা ☐ মৌখিক প্রশংসার সাথে অতিরিক্ত দায়িত্ব

☐ মূল্যায়ন হয়না ☐ ঊর্ধ্বতন কর্মকর্তা ঋণাত্মক মূল্যায়ন করেন

২৬. আপনার অফিসের কোন অফিসিয়াল ওয়েব সাইট আছে কি? ☐ হ্যাঁ ☐ না

২৭. অফিসিয়াল ওয়েব সাইটের মাধ্যমে আপনি কোন সুনির্দিষ্ট সেবা প্রদান করেন কি? ☐ হ্যাঁ ☐ না

২৮. পূর্ববর্তী প্রশ্নের উত্তর 'হ্যাঁ' হলে সেবাসমূহের সংক্ষিপ্ত বর্ণনা দিন। .....

২৯. অফিসিয়াল ওয়েব সাইটে আপনার দায়িত্ব সংক্রান্ত তথ্য, প্রতিবেদন, বা ফরম রয়েছে কি? ☐ হ্যাঁ ☐ না

৩০. আপনার কর্মক্ষেত্রে বিদ্যমান তথ্য- প্রযুক্তির সুবিধা কতটুকু সদ্ব্যবহার হয় বলে আপনি মনে করেন?

☐ অতি উত্তম ☐ উত্তম ☐ মাঝারি মানের ☐ নিম্নমানের

৩১. আপনার অফিসে দৈনিক গড়ে কতক্ষণ লোড শেডিং (Load Shedding) হয়?

☐ ১- ২ ঘন্টা ☐ ২- ৩ ঘন্টা ☐ ৩- ৪ ঘন্টা ☐ ৪- ৫ ঘন্টা ☐ ..... . (কোনটিই নয়)

৩২. ই- গভর্ন্যান্স সংক্রান্ত প্রস্তুতির বিষয়ে আপনার অফিস সম্পর্কে আপনার মূল্যায়ন (০= সম্পূর্ণ অপ্রস্তুত...১০=সম্পূর্ণ প্রস্তুত)

☐ ০ ☐ ১ ☐ ২ ☐ ৩ ☐ ৪ ☐ ৫ ☐ ৬ ☐ ৭ ☐ ৮ ☐ ৯ ☐ ১০

৩৩. নীচের কোন প্রভাবকগুলো ই- গভর্ন্যান্স বাস্তবায়নের পথে বাধা হিসেবে কাজ করে বলে আপনি মনে করেন?

☐ কর্মকর্তা- কর্মচারীর কারিগরি দক্ষতার অভাব ☐ তথ্য- প্রযুক্তি ব্যবহারে প্রণোদনের অভাব

☐ নীতিগত ও আইনগত দুর্বলতা ☐ কর্মকর্তা- কর্মচারীদের মানসিকতা ☐ অবকাঠামোগত দুর্বলতা

APPENDIX II

E-governance Preparedness of Bureaucracy: A Case Study of Office of the Deputy Commissioner, Dhaka

[N.B.: The answers given to these questions will be used for academic research only]

{Your sincere cooperation will add a lot of value to the research.}

Designation	Age	Present Work Place (Section)

1. Do you have computer at your home? ☐Yes ☐No

2. How fluent are you in using computer?

☐Very Fluent ☐ Fluent ☐ Moderately Fluent ☐ Not Fluent

3. Do you have a computer for your use at your office? ☐Yes ☐No

4. How many persons share your computer at office regularly?

☐Only You ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐More ☐Not Applicable

5. How often do you use computer for your official activities?

☐Several times a day ☐Once in a day ☐Almost every working day

☐Once in a week ☐Once in a month ☐Never ☐Other……..

6. On an average how long do you use computer daily for your official activities?

☐Less than 30 min ☐30 min to 1 hr ☐ 1 hr to 2 hr ☐ 2 hr to 4 hr ☐ More

7. Do you have internet connection at your home? ☐Yes ☐No

8. Do you have an internet connection at your office? ☐Yes ☐No

9. What is the internet connection speed at your office?

☐ Very High Speed ☐ High Speed ☐ Moderate ☐ Slow ☐ Very Slow ☐ Not Applicable

10. How often do you use internet for your official activities?

☐Several times a day ☐Once in a day ☐Almost every working day

☐Once in a week ☐Once in a month ☐Never ☐Other……..

11. Do you have a personal e-mail address? ☐Yes ☐No

12. Do you have an official e-mail address? ☐Yes ☐No

13. How often do you use your official e-mail address for communication?

☐Several times a day ☐Once in a day ☐Almost every working day

☐Once in a week ☐Once in a month ☐Never ☐Other……..

14. Do you have any formal ICT training? ☐Yes ☐No

15. If 'Yes', then what is the level of the training? ☐Advanced ☐ Moderate ☐Elementary

16. Please mention some of the contents of the training that you have got:

……

17. What was the arrangement of your ICT training?

☐Personal ☐Official ☐Both ☐Not Applicable

18. Do you think that in performing official duties ICT related training is necessary?

☐Yes ☐No

19. Are you aware of any rules, regulations or act about ICT? ☐Yes ☐No

20. Are you forced to use ICT tools/ techniques (Computer, internet, e-mail etc.) through any rules, regulation or act?

☐Yes ☐No

21. What is your opinion about adequacy of ICT related laws, acts, rules or regulations?

☐Complete ☐Sufficient ☐Insufficient ☐ Very Insufficient

22. Do you have any financial benefit for your expertise in ICT? ☐Yes ☐No

23. Do you have any other incentives for your expertise in ICT? ☐Yes ☐No

24. Do you have a positive impact of your ICT knowledge on your promotion prospect?

☐Yes ☐No

25. How is your ICT knowledge recognized by higher authority?

☐Recognized verbally ☐Recognized but with higher workload

☐Not recognized ☐Negatively evaluated

26. Does your office have an official web site? ☐Yes ☐No

27. Do you provide any service through the official web site? ☐Yes ☐No

28. If answer to the previous question is 'Yes' then please describe briefly the services provided.

……..

29. Does the official web site host any information, report or form specific to the services you provide? ☐Yes ☐No

30. What is the utilization level of the existing ICT facilities at your workplace?

☐High ☐Good ☐Low ☐Very Low

31. On an average during office hours how long does 'load-shedding' take place at your office everyday?

☐1 hr to 2 hr ☐2 hr to 3 hr ☐3 hr to 4 hr ☐4 hr to 5 hr ☐……..

32. What is your evaluation about e-governance preparedness of your office? (0 = Completely unprepared…..10 =Completely prepared)

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐10

33. Which of the following are possible hindrances to e-governance implementation? (Tick all that apply)

☐Lack of Technical Skill of the Officials ☐Lack of Infrastructure and Logistics

☐Weakness of Policy and Regulatory Framework ☐Improper Attitude of the Officials

☐Absence of Motivational Scheme on ICT Expertise

APPENDIX III

E-governance Preparedness of Bureaucracy: A Case Study of Office of the Deputy Commissioner, Dhaka

বি:দ্র: এই প্রশ্নপত্রে প্রদত্ত উত্তরসমূহ কেবলমাত্র গবেষণার কাজে ব্যবহারের জন্য।

(আপনার সানুগ্রহ সহযোগিতা গবেষণায় মূল্যবান অবদান রাখবে)

১. আপনি এই অফিসে কি ধরণের সেবা গ্রহণের জন্য এসেছেন?

.....

২. উক্ত সেবা প্রদানে তথ্য- প্রযুক্তির ব্যবহার হয় বলে কি আপনি মনে করেন? ☐ হ্যাঁ ☐ না

৩. ২ নং প্রশ্নের উত্তর 'না' হলে, আপনি কি মনে করেন এ সেবায় তথ্য- প্রযুক্তি ব্যবহারের সুযোগ রয়েছে?

☐ হ্যাঁ ☐ না ☐ প্রযোজ্য নয়

৪. উক্ত সেবার সাথে সংশ্লিষ্ট আবেদন ফরম/ তথ্য ওয়েব সাইটে রয়েছে কি?

☐ হ্যাঁ ☐ না ☐ জানা নেই

৫. সেবা প্রদানকারী কর্মকর্তা- কর্মচারীদের তথ্য- প্রযুক্তি ব্যবহারের প্রবণতা সম্বন্ধে আপনার মূল্যায়নঃ

☐ অনন্য সাধারণ ☐ উত্তম ☐ সাধারণ ☐ চলনসই ☐ নিম্নমানের

৬. সেবা প্রদানকারী কর্মকর্তা- কর্মচারীদের তথ্য- প্রযুক্তি ব্যবহারের দক্ষতা সম্বন্ধে আপনার মূল্যায়নঃ

☐ অনন্য সাধারণ ☐ উত্তম ☐ সাধারণ ☐ চলনসই ☐ নিম্নমানের

৭. ই- গভর্ন্যান্স বাস্তবায়নের জন্য অবকাঠামোগত ও তথ্য- প্রযুক্তির সুযোগ সুবিধার ক্ষেত্রে এ অফিসের সম্বন্ধে আপনার মূল্যায়নঃ

☐ অনন্য সাধারণ ☐ উত্তম ☐ সাধারণ ☐ চলনসই ☐ নিম্নমানের

৮. বর্তমানে বাংলাদেশে বিদ্যমান তথ্য- প্রযুক্তি সংক্রান্ত আইন, বিধি বা নির্দেশনা সম্বন্ধে আপনার মতামত কি?

☐ পরিপূর্ণ ☐ যথেষ্ট ☐ অপর্যাপ্ত ☐ অত্যন্ত অপর্যাপ্ত

৯. এ অফিসে সেবা প্রদানের ক্ষেত্রে বিদ্যমান তথ্য- প্রযুক্তির সুবিধা কতটুকু সদ্ব্যবহার হয় বলে আপনি মনে করেন?

☐ অতি উত্তম ☐ উত্থম ☐ মাঝারি মানের ☐ নিম্নমানের

১০. ই- গভর্ন্যান্স সংক্রান্ত প্রস্তুতির বিষয়ে এ অফিস সম্পর্কে আপনার মূল্যায়ন (০= সম্পূর্ণ অপ্রস্তুত...১০=সম্পূর্ণ প্রস্তুত)

☐ ০ ☐ ১ ☐ ২ ☐ ৩ ☐ ৪ ☐ ৫ ☐ ৬ ☐ ৭ ☐ ৮ ☐ ৯ ☐ ১০

১১. নীচের কোন প্রভাবকগুলো ই- গভর্ন্যান্স বাস্তবায়নের পথে বাধা হিসেবে কাজ করে বলে আপনি মনে করেন?

☐ কর্মকর্তা- কর্মচারীর কারিগরি দক্ষতার অভাব ☐ তথ্য- প্রযুক্তি ব্যবহারে প্রণোদনের অভাব

☐ নীতিগত ও আইনগত দুর্বলতা ☐ কর্মকর্তা- কর্মচারীদের মানসিকতা ☐ অবকাঠামোগত দুর্বলতা

APPENDIX IV

E-governance Preparedness of Bureaucracy: A Case Study of Office of the Deputy Commissioner, Dhaka

[N.B.: The answers given to these questions will be used for academic research only]

{Your sincere cooperation will add a lot of value to the research.}

1. For what type of service are you visiting this office?

……..

2. Is ICT used in providing the service you are opting for?

☐ Yes ☐ No

3. If the answer to question no. 2 is 'No' then do you think that ICT can be used to provide the service?

☐ Yes ☐ No

4. Is there any form/ information available in the web site regarding the service?

☐ Yes ☐ No ☐Don't Know

5. Please evaluate the tendency of the officials to use ICT tools/ techniques in service delivery.

☐ Excellent ☐ Good ☐ Average ☐ Below Average ☐ Low

6. Please evaluate the ICT skills of the officials to use ICT tools/ techniques in service delivery.

☐ Excellent ☐ Good ☐ Average ☐ Below Average ☐ Low

7. What is your opinion about the ICT infrastructure and logistics of this office?

☐ Excellent ☐ Good ☐ Average ☐ Below Average ☐ Low

8. What is your opinion about adequacy of ICT related laws, acts, rules or regulations?

☐Complete ☐Sufficient ☐Insufficient ☐ Very Insufficient

9. What is your opinion about the utilization level of the existing ICT facilities at this office?

☐ High ☐ Good ☐ Low ☐ Very Low

10. What is your evaluation about e-governance preparedness of this office? (0 = Completely unprepared…..10 =Completely prepared)

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐10

11. Which of the following are possible hindrances to e-governance implementation? (Tick all that apply)

☐ Lack of Technical Skill of the Officials ☐ Lack of Infrastructure and Logistics

☐ Weakness of Policy and Regulatory Framework ☐ Improper Attitude of the Officials

☐ Absence of Motivational Scheme on ICT Expertise