

Research Report on

**E-GOVERNMENT: A STUDY ON PREPAREDNESS OF
THE BANGLADESH CIVIL SERVICE**

Research Advisors

Abu Md. Maniruzzaman Khan, Rector

&

Syed Mahboob Hassan, MDS (Project)

BPATC

Researcher & Project Director

Shah Mohammad Sanaul Hoque, Ph.D

Director, BPATC

Research Associate

Tanjur Ahmed Joarder

Assistant Programmer, BPATC

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Bangladesh Public Administration Training Centre

PREFACE

The research work entitled *E-Government: A Study on Preparedness of the Bangladesh Civil Service* has been conducted as a part of the research initiatives of the Bangladesh Public Administration Training Centre (BPATC). BPATC has provided financial support and necessary assistance towards accomplishment of this research. The research report has been prepared based on field study and empirical data. Besides, many of the literatures on this area of knowledge and Internet contents were extensively consulted to prepare this report.

A critical precondition in successful e-governance efforts, initially, requires a combination of a leadership with commitment and skilled human capital in the public sector. Leaders with vision put e-governance into the agenda and manpower of the next tire make it happen immediately. Such leadership can smash through many operational barriers. Conversely, all the operational e-readiness is of limited value if there is no vision and no leadership to give directions to e-governance. With that note, manpower working in the Bangladesh Civil Service has a significant role in the implementation process of governmental functions; they constitute the vital part of policy or decision making process, as well. Therefore, whether their aptitude, awareness, and attitude in place - are some of the prior questions to initiate, implement and sustain e-governance in the country.

Considering the limited area that is covered under field study and size of the sample respondents, findings of the study cannot be generalized. However, it can offer some windows for the policy planners to look into the problem area from different angles. It may carry some academic interests, as well.

It would be our pleasure if any individual or any organization finds this work useful.

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Research Team

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Research Team

LIST OF ABBREVIATIONS

BCS	: Bangladesh Civil Service
BPATC	: Bangladesh Public Administration Training Centre
ICT	: Information and Communication Technology
GoB	: Government of Bangladesh
IMF	: International Monetary Fund
IT	: Information Technology
LAN	: Local Area Network
PC	: Personal Computer
R&D	: Research and Development
UN	: United Nations
WB	: World Bank

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EXECUTIVE SUMMARY

INTRODUCTION

E-governance can be considered as an innovative tool that creates opportunities for public sector reforms and allows the governments to operate more efficiently and effectively. It presents the prospects of better and cost effective service delivery and greater citizen empowerment. E-governance systems require an adequate access to modern technology and the ability to reconstitute the governance mechanism. Adequate human resource capability is needed to coordinate the internal and external services factors so as to be able to handle a demand for services. The public management system in Bangladesh is facing strategic challenges that demand to be addressed in a planned way to ensure readiness in all enabling institutional factors. Success in the area of e-governance requires more than just deployment of technology and building connectivity. It requires much broader and far-reaching readiness in terms of policy initiatives, infrastructure building and skill development, most of which are not technical in nature. E-governance requires prime attention in areas of administrative changes, procedural and legal issues, and preparedness of the supply and the demand sides of the public management system. Supply side refers to the public officials, who are the main drivers of e-governance as they are employed in the supply chain of public utilities and services. To ensure proper implementation of e-governance and to avoid risk of resistance, motivation and effective participation of public officials are critical prerequisites.

OBJECTIVES

Broad objective of the research is to study the supply side preparedness especially in different levels (entry level, mid level and senior level) of public managers to provide insights on their status in terms of ICT aptitude, awareness and attitude towards e-government in Bangladesh. Specific objectives are to-

- (a) determine the ratio of trained and non-trained officials and their level of ICT skill; and
- (b) assess their levels of aptitude, awareness and attitude towards e-governance.

METHODOLOGY

This study is an exploratory one and uses qualitative and quantitative data obtained from both secondary and primary sources. While sources of secondary data include printed and unprinted materials, internet, etc.,- survey results provide primary data for the purpose of the research. For the purpose of the research, a questionnaire survey among 222 members of the Bangladesh Civil Service has been conducted. Purposive sampling technique has been adopted to select the respondents.

Descriptive analysis, based on simple and cross tabulation, arithmetic average, frequency distribution, mean, range, standard deviation, etc. have been used to provide outputs of different points of investigation, such as: availability of technology, connectivity, ICT training, ICT trained employees, PC user employees, etc. Categorical scales were adopted to assess the levels of aptitude, awareness and attitude.

STUDY FINDINGS

- a. About 56% of the respondent officers have received formal training on ICT. Among them only 7.3% have received higher level training (diploma and above); besides, 6.5% have obtained training from abroad.
- b. In most of the cases (76.6%), government has provided the training for officers; nevertheless, 23.4% of the ICT trained personnel have received training from self-initiative.
- c. Among all respondents, 57.2% officers have ICT operational skill. It is further studied that 68.8% of junior level officers, 40% of mid level officers, and 46% of senior level officers can operate computer.
- d. Officers are found to limit their ICT activities mainly in the midst of word processing, browsing Internet and preparing presentational work with a high concentration on the former one. Moreover, 20.5% of the officers, who can operate computer, cannot work with any other software except word processing.

- e. Respondents' official PCs are mainly engaged with mere word processing activities. Specific reasons behind this situation, inter alia, may include:
- lack in aptitude,
 - lack in perception as to potentials and diverse utility of ICT in public affairs,
 - information management, including management of file and record keeping systems are not automated in public offices,
 - processes and procedures of public administration including services are not prepared,
 - lack of connectivity with both internal and external environment, etc.
- f. Almost 52% of the IT literate respondents inform that they do not find their own skill sufficient to perform daily work.
- g. About 30.2% of the sample population presently have an aptitude level of managing technological applications of e-governance.
- h. Among the respondents 27.5% have individual official PC, 42.8% have access to official computers, and 38.7% of them use ICT in their official activities. The rise in the number of PC user officers compared to the number of PC owners further confirms a positive trend of interest and mind-set towards adaptation of ICT by the members BCS.
- i. More than 82% indicated their needs for training on ICT; although 56% of them already received formal training. This situation points toward a 26% overlapping respondents who need further training. It partially speaks about ineffectiveness or inadequacies of ICT training received by the overlapping respondents and partially about respondents' further interest on IT.
- j. Among the officers who need training, 52.5% opted for preliminary or basic courses, 38.2% require higher or advanced training.
- k. Members of the Bangladesh Civil Service possess significant level of awareness as to the concept of e-governance; when 86.5% of the respondents belong to the clusters of 'moderate' and 'high' levels of awareness.

- l. On the other hand, more than 80% officers show favorable attitude towards e-governance.
- m. Comparative scrutiny on the levels of aptitude, awareness and attitudinal factors exhibit a mixed status of readiness of the officers towards e-governance. They show lower level of readiness in terms of technological skill (aptitude) compared to higher levels of awareness and attitude.

RECOMMENDATIONS

Recommendations for Policy Implications

- a. Prepare a comprehensive 'Framework for ICT User Skills' to be used by the public offices, particularly by the public sector training institutions, in respect of ICT training. Such a framework should be able to -
 - provide a common definition for ICT user skills,
 - describe the user skills required for specific types of jobs and levels of officers ,
 - assist to develop ICT training plan,
 - give input to training curricula,
 - set standards for ICT training programs and evaluation of skill levels, etc.
 - Streamline the in-service training programs, provided by the public training institutes/academies, in accordance with the proposed 'Framework for ICT Users Skills'.
- b. Issue general direction to all public offices for arranging in-house training on ICT on regular basis.
- c. Increase availability of and accessibility to ICT among the members of civil service.

- d. Ensure use of available ICT by all levels of the civil servants; with particular emphasis on the senior levels. Use of ICT by the seniors would have a demonstrative and trickle down effect on the others.
- e. Rescue existing technologies from the setback of underutilization by producing assorted attempts, such as: raising awareness, aptitude, perception and attitudes of the civil servants towards diverse use of ICT in public administration, automating office procedures and workflows, etc.
- f. Prepare and circulate a set of e-governance guidelines among public officials to inform and involve them. Such guidelines should be able to outline major features of national e-governance including objectives, advantages, strategic directions, upcoming events and changes, services and benefits for citizens, management structures, contact/key persons, etc.
- g. Strengthen R&D with specific allocations and mandates among the public offices, particularly in the public sector training institutions.

Recommendations for Future Research

E-readiness for e-governance is a new area of study, particularly in the context of Bangladesh, which is multi-dimensional by its scope and nature. Present research is a miniature initiative that attempts to cover a tiny part only. The wide scope of the field, in contrast, the limitations of the present study generate a diversity of demands for future research. From Bangladesh perspective, some of those may include:

- a. Investigation on the multi-angled strategic options for implementing e-governance in the country is an immediate need, in this area.
- b. Study on the legal sector, to specify the needs and pockets for interference, is essential.
- c. A thorough study on the organizational aspects would facilitate administrative re-arrangements for integrating new technologies in the public administration, re-engineering of process and procedures, integration of back offices, creation of front offices, creation of online services, etc.

- d. Identifying the training needs, motivational issues and composing a comprehensive training plan for civil servants is necessary in the way of preparing the public work force for e-governance.
- e. Cross-perspective studies on the demand side are necessary to ensure ease and interests of the citizens in e-governance service delivery, and to bring them close to the public administration.
- f. For introducing e-governance in Bangladesh, partnerships with non-governmental actors are unavoidable. Scopes and needs are there to conduct series of studies, in this area.

CONCLUSION

As an emerging concept, e-governance has become trendy since mid 1990s around the world, with various moves by the governments integrating information and communication technologies in the public sector management and in the process of delivering services for citizens. However, the growth and status of e-governance varies from country to country regarding degree of their preparedness that relates to availability, accessibility and the nature and level of use of e-governance tools by the civil servants in respect of providing services at the needs and ease of citizens. This study notes that regarding preparedness, members of the Bangladesh Civil Service show considerable strengths for e-governance in respect of their interest and adaptability to new technologies; also in respect of their levels of awareness and attitude towards e-governance. At the same time, they pose to a low level of ICT aptitude. Besides, use of ICT by the civil servants is often locked up with word processing and other elementary applications. Robust training and motivational program can erect a brilliant supply side for e-governance service delivery in Bangladesh.

CHAPTER I

INTRODUCTION

1.1 PREAMBLE

Managerialism and New Public Management (NPM), which was introduced by many developed and developing countries during the 1980s, offered public sector organizations a model based on private sector managerial practices (Criado et al.: 2002). In today's technology-driven and globalised world, e-government is the next wave of public management reform. Governments in developing countries are seeking to develop the essential institutional framework, along with necessary policies and investments in knowledge infrastructure and new technologies, which would reorient development programs and public management systems by increasing efficiency, reducing corruption and improving accountability standards. Digital empowerment of society and public management systems could become the cornerstone of development in the information age (G 8 Kyushu-Okinawa Summit: 2000). Thus, E-government can play a vital role and transform the way services are delivered as well as change the dynamics of the relationship between governments and citizens (Teicher and Smith: 2005). E-government requires a consumer centric approach to service delivery which will 'create public value'. Developed countries have passed the transitional phase of e-government infrastructure development, and now are focusing on how to implement e-government practices to improve the delivery of public services to the people and to tap the potential synergy from the interaction between new technologies and an enabling environment for the attainment of knowledge-based economies. Developing countries are still at the transitional phase, formulating policies and initiating processes to equip institutions and people to benefit from e-government.

To make e-government an operational reality public management system need to introduce a better governance infrastructure. Bangladesh has an intractable problem of poor governance. Poor governance is further piled on the public management's lack of readiness for e-government. It allows bureaucratic red tape and corruption. E-government requires an e-governance infrastructure allowing vertical and horizontal interactions between government agencies, business enterprises, multilateral organization, citizens and civil society groups. Where, members of the public management system needs to be equipped with new mindset, knowledge and skills.

For e-governance to succeed in Bangladesh 'e-readiness' must be built. This means strengthening infrastructural capacities to reduce the barriers to e-governance and strengthen the drivers. The priority, therefore, is to build e-readiness in six key areas : awareness and commitment at a high level; enactment of new laws and regulation for enabling e-governance; development of national strategy; setting up of key e-governance institutions to plan and facilitate e-governance projects; strengthening operational capacities to implement pilot projects in the area of human capacity, technology and data system and setting up of e-governance pilot projects that focus on 'net-worked government'. E-government infrastructure offers a new platform of social contract which binds three parties, public at large; government and business (UN, Public Sector Report: 2003). To translate this new social contract into public value, one of the important requirements is the readiness of the public managers we are going to examine in the case of Bangladesh. E-government also requires the transformation of hierarchical structure of public management into networked and integrated structures. Such a transformation of government is only possible if the public management system is prepared and people are enabled for the control, transmittal and proper use of information and resources in a vertical and horizontal way as the networked government structure is evolving with complexity and where e-participation of various actors is becoming important requirement for good governance.

Proposed research is an attempt to investigate into the supply side preparedness especially in the groups of entry level, mid level and senior level public managers in Bangladesh to provide insights on the level of aptitude, awareness and attitude of the public employees.

1.2 LITERATURE REVIEW

“E-government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees” (Silcock 2001: 88). Sharma (2003) suggests that e-government in its fully developed state is an e-portal. The e-portal is a one-stop government service shop that offers citizens links to all facets of government; links to non-profit organisations; links to private organisations and other agencies such as banks and multilateral organisations. The e-portal can be owned by private firms as a one stop single portal entry to the interconnected public departments (Wimmer: 2002). It may also allow self sufficient citizens to be better equipped to pursue their own private interests, as they will be in a position to self-govern and self-regulate. In Australia this system is expected to

“...improve the endemically faulty and constantly repaired machinery of the liberal democratic government.” (Meredyth Ewing & Thomas: 2003).

E-government can be considered a public policy tool that creates opportunities for public sector reforms and allows the system to operate more efficiently and effectively. It presents the prospects of better and cost effective service delivery and greater citizen empowerment (UN: 2003 in Smith and Teicher: 2004). In developed countries, e-government is about transformation and the integration or seamless service delivery of services to citizens. The transformation requires a fully committed and functional government with a focus on service delivery. E-government offers the possibility of a major shift in public sector management and service delivery. An important goal of e-government in the public sector is the promotion of engagement of people and other stakeholders in public policy making and implementation.(Clark: 2003). Another important feature of e-government is that it works as a means to cost saving on service delivery, whilst making the government more accountable and transparent by creating higher awareness of and accessibility to government activities.

E-government offers transparency and understandability of government, which highlights the governmental accountabilities (Marche & McNiven 2003). For public management this can create liability and highlight deficient accountable public servants (Silcock 2001). Governments in developing countries have formulated e-government policies citing its many benefits ranging from lowering costs, improving efficiency and providing more cohesive and responsive services to the public. But governments have not been able to create skilled, competent and motivated staff and good practices in order for a successful e-government (Silcock 2001). The Global E-government Readiness Report 2004 (UN: 2004) ranked the 191 UN members to identify how willing and ready governments around the world are to employ the opportunities offered by ICT to improve the access and quality of basic social services. Developing countries are lagging behind because of many reasons, including dearth of the preparedness of government officials, who are supposed to act as the supply side of e-governance. In the same way, the subsequent reports (UN: 2005 & 2008) demonstrate deficiencies of e-readiness among the developing countries. A quick view on the e-governance readiness index of some selected countries is presented below:

Table 1.1
E-Governance Readiness Index: 2008

Rank	Country	e-Governance readiness Index
1	Sweden	0.9157
4	USA	0.8644
6	Republic of Korea	0.8317
8	Australia	0.8108
10	UK	0.7872
95	Maldives	0.4491
101	Sri Lanka	0.4244
113	India	0.3814
122	Pakistan	0.3042
142	Bangladesh	0.2936
World average		0.4514
Southern Asia region average		0.3395

Source: Computed from UN E-Government Survey 2008: From E-Government to Connected Governance.

Structural and human capital related changes are needed at a government level to introduce effective e-government practices (I-Ways 2003). On the downside, e-government will create a transparent government, which will possibly be more accountable to the citizen (Silcock 2001). In the absence of an implementation plan the use of e-government policies is restricted to those with the necessary resources and the skills, thus creating an e-elite group within the public management system that will reinforce a digital divide (Basu, 2004). Basu (2004) also argues that access of high ranking officials to existing limited e-government practices, absence of trained managers at various levels, shortage of equipments and presence of underdeveloped infrastructure creates some degree of dysfunctionality in an already corrupt and efficient administration. Information poverty, according to Meredyth, Ewing and Thomas (2003), is increasingly emerging to governments as a significant problem in many countries. The digital divide creates questions for government as to how they are able to bridge the gap. Meredyth et al (2003) state that governments will not be able to bridge the gap by creating technology centres or subsidising access to the Internet.

There is a need to increase the supply side e-readiness through training and development supported by operational plans to execute policies. Lee-Kelley and James (2003) suggest that the technological gulf is widening between those individuals who are e-literate, those who cannot access the Internet and those who are concerned about the cost of access. It is up to the government to create the necessary skills, readiness and resources so that public managers know how to access computers and the Internet and use it as an efficient public policy

making and implementation tool. Singapore has created a position where a successful e-government system has been implemented, e-government has given the government great monetary savings, it is a country that maximizes its technology and the public in Singapore is well wired and up to date with awareness what technology can offer (Ke & Wei 2004). Lodge (2003) articulates that e-government is a powerful device, which is devoid of political meaning; it is an information server to the community. But the public managers as the suppliers of cost effective and quality services should have the required e-readiness.

E-government systems require an adequate access to modern technology and the ability to reconstitute the governance mechanism. Adequate human resource capability is needed to coordinate the internal and external services factors so as to be able to handle a demand for services (Wimmer 2002).

The government needs to implement the following in order to create a successful e-government: public awareness; legal and regulatory infrastructure; manpower, knowledge and skills of the people who can develop the system in order to help others use the system and maintain a high service level (Sharma 2003): There is a need to have a strong commitment from governments to make the necessary infrastructural changes and to introduce modern technologies (Wimmer, 2002). Sharma (2003) highlights that governmental staff need to be adequately trained to deal with problems, and to support the introduction and further maintenance of the services of e-government. Without the necessary skills and willingness, the development of e-government will remain at a public debate level. There requires a well devised strategic plan to take it to the interactive stage for the short term and then to at an advanced stage at the long term. Successful implementation of e-government policies demands not only availability of technology and infrastructural facilities but also a skilled and capable manpower willing to take a lead in using cutting edge technology.

1.3 DEFINITION OF KEY TERMS

E-Government

E-government refers to a situation where government bodies and agencies are electronically automated. E-Government is an institutional approach to jurisdictional political operations. E-government is actually a narrower discipline dealing with the development of online services to the citizen, more the e on any particular government service - such as e-tax, e-transportation or e-health.

E-Governance

E-Governance is a broader topic that deals with the whole spectrum of the relationship and networks within government regarding the usage and application of ICT. E-governance is a procedural approach to co-operative administrative relations, i.e. the encompassing of basic and standard procedures within the confines of public administration. E-Governance encompasses a series of necessary steps for government agencies to develop and administer to ensure successful implementation of e-government services to the public at large.

Although e-government and e-governance can be defined as two very distinct terms, they are closely associated with each other having different meanings. As these two terms are often used interchangeably, it might not have been possible in the study always to follow a strict boundary line between these terms.

E-Readiness

E-readiness refers to the existing environment and the strategic preparedness for e-government. A country level of 'e-readiness' is the degree to which each country is prepared to the introduction of e-government. By assessing the relative advancement in the areas that are most critical for e-government adoption by different key factors, countries would be in a better position to evaluate opportunities and challenges, as well as their own strengths and weaknesses.

Information and Communication Technologies (ICT)

"ICT include the whole range of technologies designed to access, process and transmit information in regard to text, sound, data and pictures. ICT encompass the full range from traditional widely used devices such as radios, telephones or televisions to more sophisticated tools like computers or the Internet (Weigel: 2004). Except many other applications, ICT is considered both as an instrument of citizen empowerment and public sector reform (Lal: 1999).

1.4 STATEMENT OF THE PROBLEM

Transformation from traditional governance to e-governance is not a linear process. The public management system in Bangladesh is facing strategic challenges that demand to be addressed in a planned way to ensure readiness in all enabling institutional factors. Success in the area of e-governance requires more than just deployment of technology and building connectivity. It requires much broader and far-reaching readiness in terms of policy

initiatives, infrastructure building and skill development, most of which are not technical in nature (UN: 2004). E-governance requires prime attention in areas of administrative changes, procedural and legal issues, and preparedness of the supply and the demand sides of the public management system. Supply side refers to the public officials, who are the main drivers of e-governance as they are employed in the supply chain of public utilities and services. To ensure proper implementation of e-governance and to avoid risk of resistance, motivation and effective participation of public officials are critical prerequisites.

In Bangladesh, e-governance has become an agenda for public sector reform and good governance. Some preparatory initiatives have been taken to implement e-government practices at various levels of public management system. However, although a national ICT Policy exists in the country, no national vision, strategy or action plan for e-governance has yet been defined by government.

Bangladesh is facing a crisis in governance as the systems of governance in Bangladesh are increasingly becoming unresponsive and irrelevant to the needs and concerns of the vast majority of the population. In an international seminar (held in Dhaka on 12-14 February 2002, on 'Poverty Reduction Strategy Paper', jointly organized by Government of Bangladesh, WB and IMF), the attendees identified accountability, transparency, decentralization, administrative reform, and satisfaction of public service by its clients as key problem areas in the present governance system in Bangladesh. One of the recommendations was to focus on e-governance and eventually the participants explored the potential role of the IT sector in bringing about a radical change to improve the situation. The recent research findings highlight the critical success factors of the e-government system, ranging from effective strategies, government leadership and knowledge readiness of public managers in a developing country context. Singapore is a leading example of successful e-government. According to Ke and Wei (2004) this can be attributed to strong leadership, which has created a strategic action plan for e-government implementation including e-literate public officials. Governments in developing countries need a strong leadership and commitment to create e-capability. E-government initiatives need to be politically acceptable to the relevant opinion makers, and government at the time to strengthen the supply side of e-government (Basu: 2004). Technology can make government transparent; in developing countries this may not be ideal especially where governments are obscure, inefficient, e-illiterate and corrupt (Basu: 2004; Vriens & Achterbergh: 2004). The general consensus is that e-governance is electronic delivery of government services to the people whereas the potential for e-governance is

beyond electronic delivery of government services to the people. E-Governance in its real sense is the use of information and communication technologies to support good governance. It should be considered beyond old 'IT in government'. The areas noted e-administration, e-citizen and e-services initiatives, and the government-related components of e-society together represent a Networked Government model for e-governance, the overall aim of which is to more effectively utilize ICT for good governance reforms. A networked government model can strengthen existing relationships and build new partnerships within the public management system allowing important stakeholders including civil society groups to engage in creating the architecture of good governance. To introduce a networked government model, the public management system requires trained and knowledgeable managers. To create e-awareness and establish readiness, Bangladesh needs to develop well-trained and motivated public managers who will be in charge of efficient use of existing resources. They should have the ability to integrate technology with the development, planning and implementation of appropriate action plans for the effective and speedy solution of public service problems.

The emphasis of current private sector and donor initiatives has generally been on e-business and non-governmental e-society that has left a large and growing gap in the public governance system. Multilateral agencies are interested in e-government which stems from the prescription that e-government will advance the agenda on governance and fiscal reform, transparency, corruption, empowerment and poverty alleviation. E-government is thus considered a tool for government reform. E-government is not the software page or a website. It is a process too; it is about how the government works and uses IT, share information and deliver services to external and internal clients. The expected result is governance that is more transparent and convenient, and a government that is less corrupt, both of which would allow decreases in costs and an increase in revenue.

One of the key supply side driving forces is public managers. Their preparedness, psychology, initiatives and expertise to use e-government as a process can facilitate the leapfrog approach for developing countries. Before implementing e-government policies for better governance there is a need for e-readiness of important actors. Success stories of various countries suggest that strong political and administrative commitment and leadership, detailed project management, clearly defined goals and benefits, significant process re-engineering, adaptation of established standards and protocols, investment in training and enhanced e-capability are all critical factors.

1.5 OBJECTIVES

Broad objective of the research is to study the supply side preparedness especially in different levels (entry level, mid level and senior level) of public managers to provide insights on their status in terms of ICT aptitude, awareness and attitude towards e-government in Bangladesh.

Specific objectives are to-

- (a) determine the ratio of trained and non-trained officials and their level of ICT skill;
and
- (b) assess their levels of aptitude, awareness and attitude towards e-governance.

1.6 RATIONALE

Human resource is the driving force of any organization. Public workforce, as main drivers, is the 'supply side' of e-governance; also key to planning, designing and implementing any e-governance initiative. Therefore, necessarily they require being equipped with right aptitude (skill) perception (understanding), attitude (desire) and to move with changes.

A competent and well-motivated public administration lies at the core of good government (World Bank: 2002). People engaged in the public service need to realize and refresh the inner driving force –the very desire to make a meaningful contribution to the society that brought them to this arena of public administration. Public administration is responsible for improving citizens' life and for delivering 'public value'. It is something more than that how efficiently a public servant performs his/her duties. This is about his/her professional commitment to contribute to a better life for all. This professional commitment has to manifest in the way they do their work, in the way they interact with political leaders, in the way they engage with citizens, and in the way they bring about positive changes in their organizations and in their communities. They need to know as to who they are, why they are in the public administration, why all supports including new technologies are around them, how to ensure appropriate use of those technologies in their daily work that will ultimately lead to citizens' benefit. How they perceive e-governance deeply relates the issue of how they will engage with e-governance initiatives. "When everyone becomes a partner in the enterprise, whatever its mission, the possibilities for quantum leaps in performance are very real. ... Re-inventing government can have dramatic results, but only if those involved are prepared to use dramatic methods" (Thomas B. Riley: 2003).

On the contrary, a stiff or negative attitude usually lays critical resistance against organizational changes, when a positive attitude can become a powerhouse for such changes. Employees usually feel comfortable with existing environment, procedures and tools because of long practiced organizational

culture and habit. They often fear to adopt or handle with new technologies, newer ways and means of functioning. Besides, corrupt civil servants may dislike a transparent and smooth functioning with e-governance efforts. Such cultural habits are difficult to fight with. A change in the mindset of public sector workforce helps enabling effective e-governance.

Lack of confidence, knowledge or skill among workforce pushes them to a negative stand. In many cases, lack of skill and knowledge also leads to failure of e-governance project. Once the project is handed over to the respective agencies, the management and sustainability of the systems seem to be a major problem. For smooth running of e-governance, Gord Jenkins observes an overriding need for an updated aptitude of government program managers. As he says: "In every project I worked on, no matter the location, not enough time was spent on making sure that senior management understood exactly what e-gov was and how it would be implemented" (Gord Jenkins).

Amongst public officials, globally, a generic lack of e-governance leadership and commitment is observed because of lack of awareness, knowledge, skills and confidence. This lack leads to such e-governance initiatives that are basically planned and driven by vendors, donors or by consultants. As a result, inappropriate systems from other sectors or countries that do not fit specific realities are often being forced in. It is also observed that many recent e-development initiatives from bilateral and multilateral donors appear to be deliberately avoiding government. This is partly because of the human capacity and regulatory constraints within government, and partly because of continuing 'government bad, markets/NGOs good' mentality. Therefore, many e-initiatives are seen bypassing the state and going for community telecentres, ICTs in schools, telemedicine, e-commerce, e-society, etc. (Richard Heeks: 2001).

Change in the mindset and skill level of senior level civil servants can be brought about by focused organization development interventions and training programs. Once this is done, they can take the lead as 'champions' and act as 'change agent' that can ultimately result into a corresponding trickle down effect right through the spectrum of government.

Informing the workforce about the objectives, needs and as to how e-governance has planned to be implemented will encourage their acceptance and participation right from the beginning. Publication of well structured and easy to understand e-governance guidelines that are signed by senior officials and distributed to the civil servants will help official dissemination of useful information on e-governance move, at the same time, will expose the drives and supports of senior management.

Initiatives for introducing e-governance in Bangladesh must need a well prepared public sector managers as the driving force. For successful implementation, e-governance initiatives, *inter alia*, needs to know the answers of the following:

- ❑ What portion of the BCS officers does have ICT skills?
- ❑ What portion of them has access to ICT
- ❑ What type of ICT skills currently they posses?
- ❑ What is their competency level?
- ❑ What is the mindset; particularly, what are the levels of awareness and attitude towards e-governance?

E-governance is one of the most contemporary concepts of the present world. By this time, some nations already have proceeded much ahead with this. Some other countries are well prepared to take off or taken off. Countries like Bangladesh have just started moving. Therefore, in Bangladesh context, the proposed field remains almost a virgin one to be explored into, where substantial knowledge gap exists. Very few government, business or technical reports, documents or articles are presently available. Particularly, in the area of preparedness of Bangladesh Civil Service or from public management perspective- not many academic researches or studies have been conducted, so far.

CHAPTER II

METHODOLOGY

2.1 METHODOLOGY

This study is an exploratory one and uses qualitative and quantitative data. It is descriptive and empirical in nature. The study conducts a survey and adopts a purposive sampling technique to attain the aforementioned objectives.

2.1.1 Data Sources

The study depends on both primary and secondary sources for necessary data and information; while sources of secondary data include printed and unprinted materials, internet, etc. On the other hand, survey results provide primary data for the purpose of the research.

2.1.2 Selection of Respondents, Sample Size and Sampling Technique

For the purpose of the research, a survey among the members of the Bangladesh Civil Service working in ministries, departments and in various agencies throughout the country has been conducted. Total two hundred and twenty two officers of three levels (entry/junior level, mid level and senior level) belonging to the BCS constitute the respondents of the study. Purposive sampling technique has been adopted to select the respondents. These respondents are mainly selected from the participants of 39th & 40th Foundation Training Courses, 57th 58th Advanced Course on Administration and Development, 47th 48th Senior Staff Course, and 7th, 8th & 9th Batches of Managing at the Top-2 Workshops. Actual number and ratio of the respondents of different levels are as follow:

Table 2.1

Distribution of Respondents by Levels

Levels	Number	Percentage (%)
Junior level (entry level officers)	122	54.95
Mid level (Deputy Secretary & equivalent)	50	22.52
Senior level (Joint Secretary/equivalent or above)	50	22.52
Total	222	100.00

2.1.3 Survey Tools and Measurement Scale

Questionnaire survey was one of the main tools of the study to collect primary data in respect of IT training and IT operational skill of the respondents, availability of ICT around them, use of ICT, their awareness, perception and attitude towards e-governance, etc. A structured questionnaire (Annexure I) has been used for this purpose. The questionnaire comprised of five major parts having different numbers of questions/statements, such as: personal information, IT training and IT operational skill, availability and use of ICT, awareness, and attitude. Questionnaires were distributed to the respondents for their voluntary filling up.

Descriptive analysis, based on simple and cross tabulation, arithmetic average, frequency distribution, mean, range, standard deviation, etc. have been used to provide outputs of different points of investigation, such as: availability of technology, connectivity, ICT training, ICT trained employees, PC user employees, etc. Categorical scales were adopted to assess the levels of aptitude, awareness and attitude. Specific levels of awareness and attitude have been categorized as follow:

Low level:	< Mean - Standard Deviation
Moderate level:	< Mean $\pm$ Standard Deviation
High level:	> Mean +Standard Deviation

2.1.4 Scopes and Limitations

As the focus of this study is the issue of the preparedness of the supply side of the e-governance in terms of their ability and willingness towards using available technologies, other issues such as process reengineering, demand side readiness, etc. remain beyond the scope of this research. Considering the limitations regarding scope and sample size, this study is not intended to be fully representative. Besides, the survey process of the study deals with the views of the respondent officers only. Their supervisors or other colleagues were not been consulted, -which also remains as a limitation of the study.

A critical precondition in successful e-governance efforts, initially, requires a combination of a leadership with commitment and a knowledged and skilled human capital in the public sector. Leaders with vision put e-governance into the agenda and manpower of the next tire make it happen immediately. Such leadership can smash through many operational barriers. Conversely, all the operational e-readiness is of limited value if there is no vision and no leadership to give directions to e-governance. With that note, manpower working in the

Bangladesh Civil Service has a significant role in the implementation process of governmental functions; they constitute the vital part of policy or decision making process, as well. Therefore, whether their aptitude, awareness, perception and attitude in place - are some of the prior questions to initiate, implement and sustain e-governance. Proposed research would be a pioneering study in this area of investigation through which policy planners, e-government practitioners, members of the civil service, and other stakeholders are expected to be benefited.

CHAPTER III

E-READINESS STATUS OF THE BANGLADESH CIVIL SERVICE

3.1 ICT Training among BCS Officers

The survey observes that out of 222 respondent officers of the Bangladesh Civil Service, about 56% have received formal training on ICT. In respect of ICT training, significant difference is not prevalent among the three levels of officers; however, a higher trend is evident among the junior level officers. Among the ICT trained personnel, 20% are female. Almost all of the training courses, received by the officers, are concentrated around basic literacy -only 7.3% have received ICT education on diploma and above level. It is also observed that 6.5% have obtained training from abroad. In most of the cases, government has provided the training for officers; nevertheless, 23.4% of the ICT trained personnel have received training from self-initiative.

Table 3.1
ICT Training among Sample Population

Formal Training on ICT by Levels of Officers	Formal Training on ICT		Total
	Yes	No	
Junior Level Officers	73 (59.8%)	49 (40.2%)	122 (100.0%)
Mid Level Officers	24 (48.0%)	26 (52.0%)	50 (100.0%)
Senior Level Officers	27 (54.0%)	23 (46.0%)	50 (100.0%)
All	124 (55.9%)	98 (44.1%)	222 (100.0%)
(n = 124)			
Distribution of ICT Training by Sex (%)	Male	Female	
	79.8	20.2	
Officers' ICT Training by Course Type (%)	Basic ICT Literacy	Diploma & Above	
	92.7	7.3	
Distribution of ICT Training by Home & Abroad (%)	Home	Abroad	
	93.5	6.5	
ICT Training by Sponsorship (%)	Government Sponsored	Self Sponsored	
	76.6	23.4	

3.2 ICT Operational Skill

Among all respondents, 57.2% officers have ICT operational skill. When compared by the levels, junior level officers stand ahead in respect of ICT skill; on the other hand, mid level officers lag behind. It is studied that 68.8% of junior level officers, 40% of mid level officers, and 46% of senior level officers can operate computer.

Table 3.2
Distribution of ICT Operational Skill by Levels of Officers

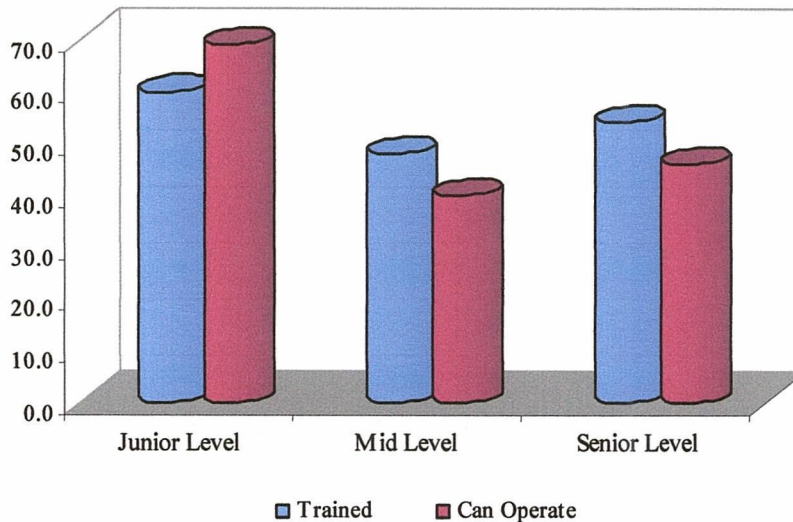
	ICT Operational Skill		Total
	Yes	No	
Junior Level Officers	84 (68.8%)	38 (31.2%)	122 (100.0%)
Mid Level Officers	20 (40.0%)	30 (60.0%)	50 (100.0%)
Senior Level Officers	23 (46.0%)	27 (54.0%)	50 (100.0%)
All	127 (57.2%)	95 (42.8%)	222 (100.0%)

3.3 Adaptability of ICT

As indicated by the respondents 57.2% of the officers can operate computer, which is 1.3% higher than the percentage of IT trained personnel. It represents a growth through adaptability or informal training. The growth is not significant when compared between aggregates of the officers who are trained on ICT and who can operate computer. However, when considered by the levels of officers, 8% decline can be observed among mid and higher levels of officers. In contrast, among the junior level officers, a 9% increase is studied. This observation demonstrates an existing adaptability among junior level officers towards change and innovation that might be considered as an added strength for e-governance move in the country.

Figure 3.1

ICT Trained and ICT Literate Officers



3.4 Level and Type of IT Proficiency

Following table projects the level and type of IT proficiency among IT literate respondents. When they were offered a five point categorical scale to evaluate their own proficiency level in eight specific types of software, as well as an open type (“others”), 20.5% of them informed that they were not able to work with any other software except word processing. They further tend to show a concentration of their skill within four types of application, namely: word processing, spreadsheet analysis, presentational and Internet. The table, however, indicates general limitations as to handling other important computer applications and shows that most of the respondents virtually have no aptitude in statistical work, database management or in any other advance use of ICT.

Table 3.3

Level and Type of IT Proficiency among IT Literate Civil Servants
(n = 127)

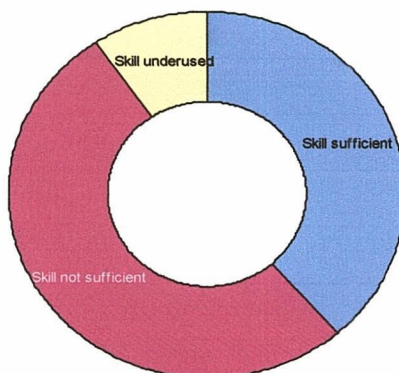
Skill Type	Skill Level				
	Excellent	Good	Working	Little	No
Word Processing	14.2	23.6	50.3	11.8	0
Spread Sheet Analysis	4.7	15.0	35.4	24.4	20.5
Statistical Package/Software	0	5.5	8.7	10.2	75.6
Database Management	0	8.7	12.6	25.2	53.5
Project Management	0	0	0	5.5	94.5
Graphical Presentation	7.1	15.7	32.3	19.7	25.2
Internet	7.9	18.9	34.6	14.2	24.4
Programming	0	2.3	6.3	7.9	83.5
Others	0	0	0	6.3	93.7

This situation indicates that most cases officers are found to ponder their activities in word processing, browsing Internet and preparing presentational work with a high concentration on the former one.

However, in respect of skill, almost 52% of the IT literate respondents inform that they do not find their own skill sufficient to perform daily work, 38.6% notify that their skill is sufficient for performing daily work, and 9.4% evaluate that their skill remain underused.

Figure 3.2

Respondents' Views about Own ICT Skill



3.5 Aptitude Level of Officers for E-Governance

Based on the individual data on IT proficiency, general level of IT aptitude is evaluated through calculating respondents' scores in five point scale ranging from zero to four, as below:

Scores for each category:

Excellent = 4, Good = 3, Working = 2, Little = 1 and No = 0

Minimum individual score calculated = 1

Maximum individual score calculated = 26

Low Level of Aptitude = Score 1-5

Moderate Level of Aptitude = Score 6-15

High Level of Aptitude = Score 16-26

Based on the calculation, individual scores in classes and corresponding levels of aptitude are shown in the following table.

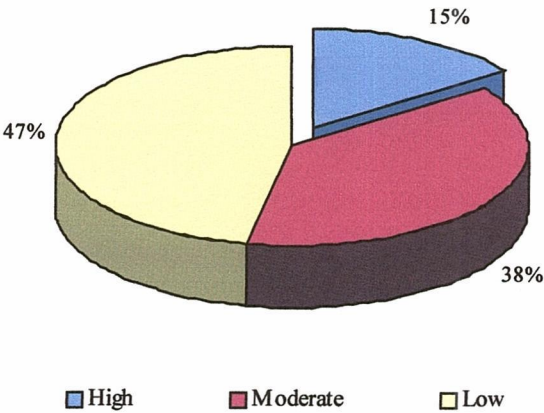
Table 3.4
Frequency Distribution by Individual Scores and Aptitude Level

Score	f	%	Level of Aptitude
1-5	60	47.2	Low
6-10	30	23.6	Moderate
11-15	18	14.2	Moderate
16-20	12	9.5	High
21-26	7	5.5	High
Total	127	100.0	-

Distributions of individual scores show that 47.2% of the IT literate officers fall in the 'Low Level of Aptitude'. This group has a score of maximum five only. Meaning that they are not able to manage three types of applications at a working proficiency level and pose a low level of IT aptitude. Further effort, in particular, supplementary training is necessary for this group to improve their aptitude level. About 38% of IT literate officers (21.6% of total respondents) show a 'Moderate Level of Aptitude', members of this group hold an equivalent ability of managing at least three types of computer applications, and for each type, they have no less than a 'working' level of proficiency.

These officers are expected to be able to inflate their present level of competence by themselves as well as gradually adept with further technological applications and changes in their official activities. In that contemplation, they are presently ready for e-governance applications. Fifteen percent of the ‘IT Literate’ (8.6% of total respondents) personnel possess a ‘High Level of Aptitude’. Officers, within this group, have an equivalent ability of handling minimum 4-5 types of applications, and having 'excellent' level of proficiency for each type.

Figure 3.3
Aptitude Level of IT Literate Officers for E-Governance



3.6 Availability and Use of ICTs among Officers

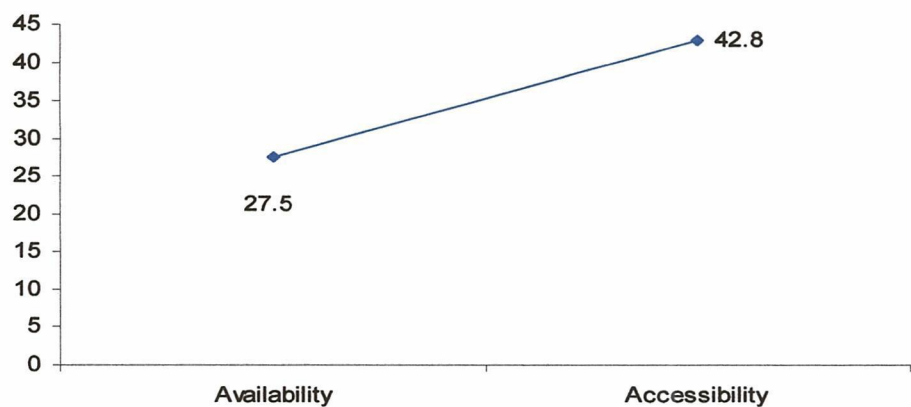
3.6.1 Availability

As to availability, 27.5% of total respondents inform that they have individual PC(s) in their own offices. Additional 15.3% has access to computers that are under else's jurisdiction or located elsewhere in their respective offices, and can get their important tasks done over there. These figures disclose that in the Bangladesh Civil Service 42.8% of officers have access to computers, either directly or indirectly.

Only 15.3% of the respondents convey that LAN exists in their respective offices. On the other hand, 66.7% indicated that their offices are connected to the Internet. However, only 26.6% respondents' own PCs are connected with Internet.

Figure 3.4

Availability of and Accessibility to ICT

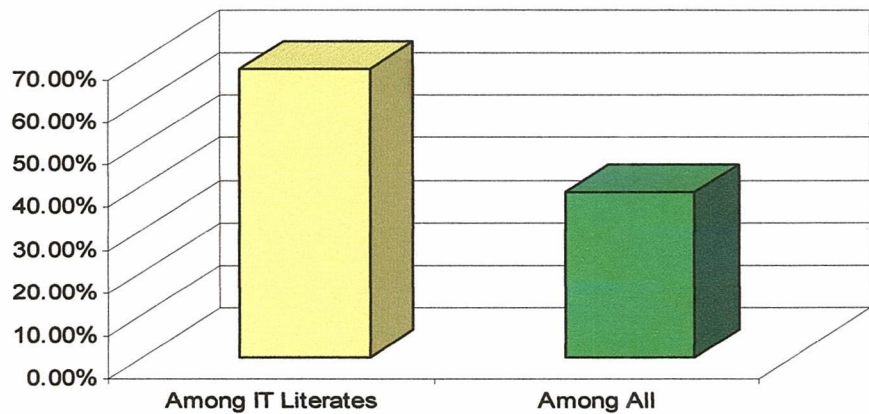


3.6.2 PC User in Civil Service

Among the IT literates, 22.8% officers do not use computers because of absence of or limited access to technology or because of they can get work done by their supporting staff; another 9.4% do not use it because of lack of confidence or they do not feel convenient to use computer. With that note, PC user officers in the civil service can be calculated as 67.7% among the IT literates and 38.7% among the total respondents.

Figure 3.5

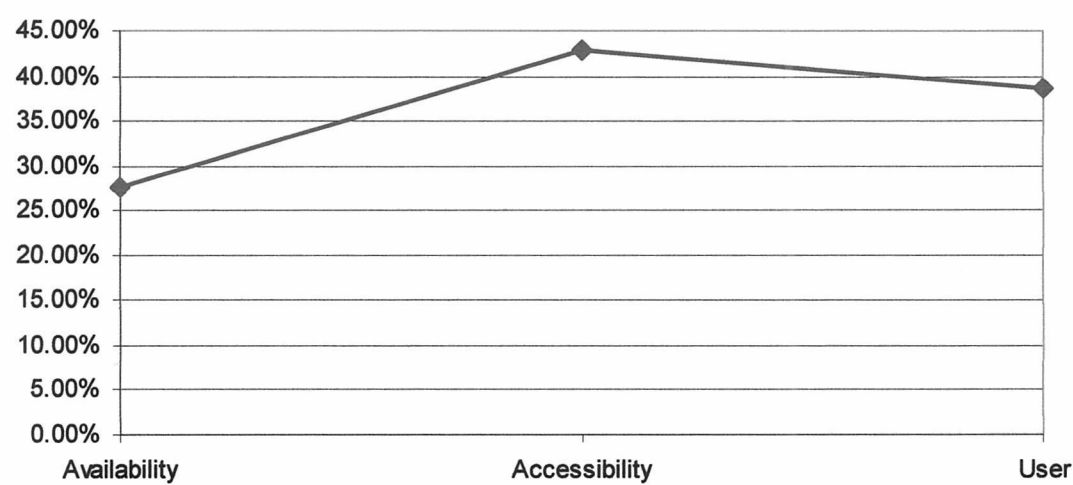
PC User in Civil Service



With the statistics, mentioned above, a 15.3% rise in terms of accessibility can be recorded if compared to the availability of ICT in Bangladesh Civil Service. At the same time, a 4% decline is noticeable if the statistics of accessibility of ICT is compared to the statistics of PC users in the civil service. However, an encouraging escalation (11.2%) still can be observed if the statistics of availability of ICT and user of ICT are compared together. It indicates a positive trend of interest and mind-set towards adaptation of ICT by the members BCS.

Figure 3.6

PC Users Compared to Availability and Accessibility

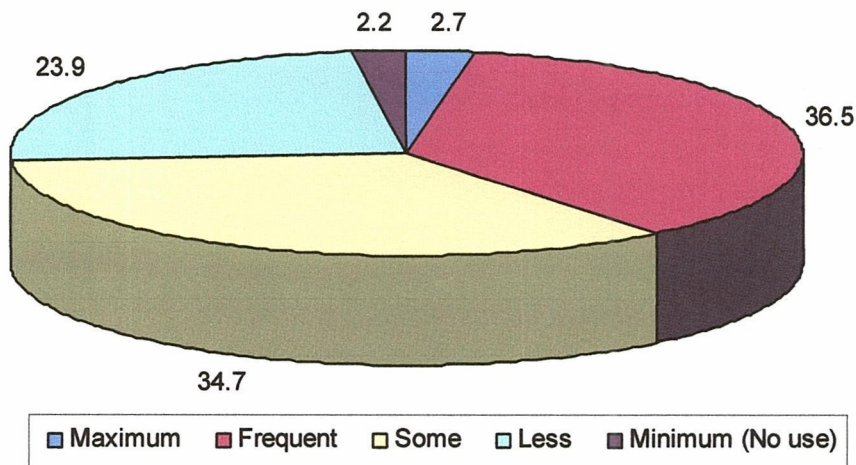


3.6.3 PCs in Use

About extent of use of respondent's office PC, in a five-point scale ranging from 'maximum use' to 'no use', 2.7% and 2.2% of them are in favor of the maximum and the minimum ('no use') respectively. When, 36.5% consider that their PCs are in 'frequent use', 34.7% consider for 'some use' and rest 23.9% for 'less use'.

Figure 3.7

PCs in Use



It is evident from the responses of the studied population that their official PCs are mostly engaged with mere word processing activities. Both lack in capability of and limited scope (in terms of automation and process reengineering) for diverse use of computers may be responsible for leaving PCs with simple task of word processing. Specific reasons, among many others, may include:

- a. lack in aptitude,
- b. lack in perception as to potentials and diverse utility of ICT in public affairs,
- c. information management, including management of file and record keeping systems are not automated in public offices,
- d. processes and procedures of public administration including services are not prepared,
- e. lack of connectivity with both internal and external environment, etc.

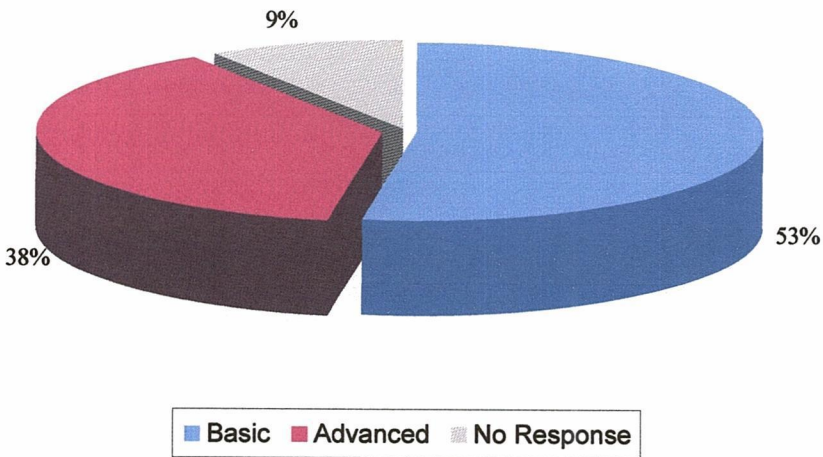
3.7 ICT Training Needs

Although 55.9% of total respondents are already trained, as shown above, 82.4% have answered positively when asked whether they need training on ICT. This situation indicates toward more than 26% overlapping respondents who need further training on

ICT. It partially speaks about ineffectiveness or inadequacies of ICT training received by the overlapping respondents and partially about respondents' further interest on IT.

Among the officers who need training, 52.5% opted for preliminary or basic courses, 38.2% require higher or advanced training and 9.3% kept them unanswered, in this regard.

Figure 3.8
ICT Training Needs

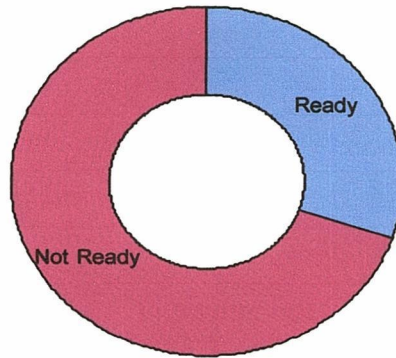


3.8 Readiness for E-Governance

3.8.1 Aptitude

It is revealed from the study that about 30.2% of the sample population presently have an aptitude level of managing technological applications of e-governance. Among them 8.6% of the total respondents have an advanced level of IT aptitude who can contribute to introduce e-governance. On the other hand, almost 70% of the members of the civil service are not currently in a position to manage technological applications in public administration.

Figure 3.9
Readiness by ICT Aptitude



3.8.2 Awareness

Five statements on e-governance associated premise were offered to the sample respondents to provide their scrutiny in respect of own awareness. To evaluate their awareness level, individual responses for the statements were coded into five point values, and then individual scores were calculated. Based on the calculated scores, using SPSS, respondents' awareness levels were assessed in the following way:

Scores for each statement:

Quite aware=5, Aware=4, Slightly aware=3, Simply heard=2 & Not aware=1

High Level of Awareness = $> \text{Mean} + \text{SD}$

Moderate Level of awareness = $\leq \text{Mean} \pm \text{SD}$

Low Level of Awareness = $< \text{Mean} - \text{SD}$

Table 3.5
Level of Awareness about E-Governance

(n=222)

Officers	Level of Awareness		
	High	Moderate	Low
Junior Level Officers	23.8	59.8	16.4
Mid Level Officers	28.0	58.0	14.0
Senior Level Officers	32.0	62.0	6.0
All	26.6	59.9	13.5

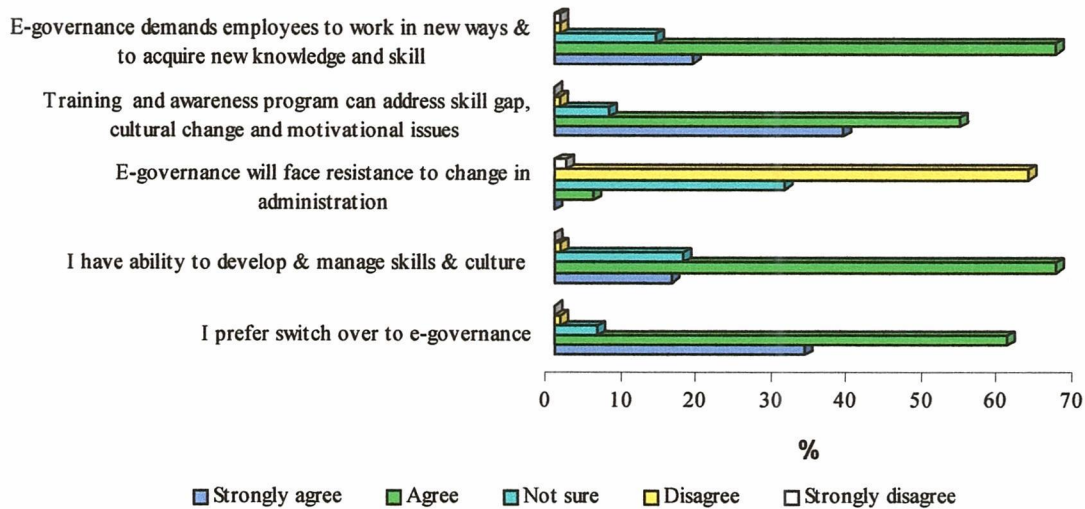
Result of the computation, provided in the above table indicates that the sample respondents possess significant level of awareness as to the concept of e-governance i.e., about happenings of its relevant premises. In particular, about 86.5% of the respondents belong to the clusters of 'moderate' and 'high' levels of awareness. Basically, the 'low level of awareness' cluster is comprised of the junior and mid levels of officers. It is evident; therefore, compared to the senior level civil servants, the junior level officers show a lower level of awareness. Conversely, it shows that the higher the level of officers the higher the level of awareness about e-government. Appropriate training plan including awareness-building programme can contribute to further their awareness level.

3.8.3 Attitude

The meaning and importance of a new idea or a change in organization are largely influenced by the attitudes of the workforce. Perception is an important element of an attitude. From organizational perspective, attitude can be defined as “complexes of beliefs and feelings that people have about specific ideas, situations, or other people” (Gregory and Ricky: 1995). An attitude is analogous to a filter, where certain kinds of things can pass through it whereas others are rejected by it.

Based on responses given by the sample population, levels of attitude of the respondents have been assessed adopting the same way that is mentioned in the case of measuring awareness levels. Regarding attitude, fifteen statements were placed before the respondents to evaluate their attitude. Some of those are demonstrated in the following figure:

Figure 3.10
Attitudinal Responses towards E-Governance



Result of the assessment of the responses is calculated and then based on the calculation, respondents' attitudinal states are clustered under three categories as provided in the following table:

Table 3.6
Officers' Attitude towards E-Governance

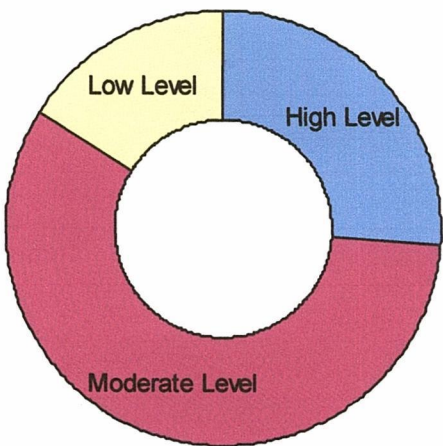
(n=222)

Officers	Level of Attitude		
	High	Moderate	Low
Junior Level Officers	20.5	59.8	19.7
Mid Level Officers	32.0	54.0	14.0
Senior Level Officers	34.0	56.0	10.0
All	26.1	57.7	16.2

It is revealed from the table that high-ranking officers show higher levels of attitude towards e-governance compared to the junior officials. Out of the total respondents, 26% has a high level of attitude, 57.7% has moderate level of attitude and 16.2% officers hold unfavourable or low level of attitude. If moderate and high levels of attitudes are combined together, it can be studied that more than 80% officers can be assembled under a cluster of favourable attitude towards e-governance.

Figure 3.11

Readiness of BCS by the Levels of Attitude



Study on the aptitude, awareness and attitudinal factors exhibit a mixed status of readiness of the officers towards e-governance. They show lower level of readiness in terms of technological skill (aptitude) compared to their levels of awareness and attitude. From an overall context, it can be mentioned that a considerable portion of the civil servants is currently able to adapt with the e-governance take off, to some extent. But with the observation of a lower level of technological skill among officers, - smooth implementation of e-governance applications requires a comprehensive training program for civil servants that would effectively deal with awareness issues, mindset, motivational and cultural aspects that are consistent with e-governance goals and focus, in general. On the hand, that would also be able to foster a wide range of perception about use of ICT in public administration, provide necessary skill and build attitudes towards change and reforms -in particular.

CHAPTER IV

FINDINGS, RECOMMENDATIONS AND CONCLUSION

4.1 STUDY FINDINGS

- a. About 56% of the respondent officers have received formal training on ICT. Among them only 7.3% have received higher level training (diploma and above); besides, 6.5% have obtained training from abroad.
- b. In most of the cases (76.6%), government has provided the training for officers; nevertheless, 23.4% of the ICT trained personnel have received training from self-initiative.
- c. Among all respondents, 57.2% officers have ICT operational skill. It is further studied that 68.8% of junior level officers, 40% of mid level officers, and 46% of senior level officers can operate computer.
- d. Officers are found to limit their ICT activities mainly in the midst of word processing, browsing Internet and preparing presentational work with a high concentration on the former one. Moreover, 20.5% of the officers, who can operate computer, cannot work with any other software except word processing.
- e. Respondents' official PCs are mainly engaged with mere word processing activities. Specific reasons behind this situation, *inter alia*, may include:
 - lack in aptitude,
 - lack in perception as to potentials and diverse utility of ICT in public affairs,
 - information management, including management of file and record keeping systems are not automated in public offices,
 - processes and procedures of public administration including services are not prepared,
 - lack of connectivity with both internal and external environment, etc.

- f. Almost 52% of the IT literate respondents inform that they do not find their own skill sufficient to perform daily work.
- g. About 30.2% of the sample population presently have an aptitude level of managing technological applications of e-governance.
- h. Among the respondents 27.5% have individual official PC, 42.8% have access to official computers, and 38.7% of them use ICT in their official activities. The rise in the number of PC user officers compared to the number of PC owners further confirms a positive trend of interest and mind-set towards adaptation of ICT by the members BCS.
- i. More than 82% indicated their needs for training on ICT; although 56% of them already received formal training. This situation points toward a 26% overlapping respondents who need further training. It partially speaks about ineffectiveness or inadequacies of ICT training received by the overlapping respondents and partially about respondents' further interest on IT.
- j. Among the officers who need training, 52.5% opted for preliminary or basic courses, 38.2% require higher or advanced training.
- k. Members of the Bangladesh Civil Service possess significant level of awareness as to the concept of e-governance; when 86.5% of the respondents belong to the clusters of 'moderate' and 'high' levels of awareness.
- l. On the other hand, more than 80% officers show favourable attitude towards e-governance.
- m. Comparative scrutiny on the levels of aptitude, awareness and attitudinal factors exhibit a mixed status of readiness of the officers towards e-governance. They show lower level of readiness in terms of technological skill (aptitude) compared to higher levels of awareness and attitude.

4.2 RECOMMENDATIONS

4.2.1 Recommendations for Policy Implications

- a. Prepare a comprehensive 'Framework for ICT User Skills' to be used by the public offices, particularly by the public sector training institutions, in respect of ICT training. Such a framework should be able to -
 - provide a common definition for ICT user skills,
 - describe the user skills required for specific types of jobs and levels of officers ,
 - assist to develop ICT training plan,
 - give input to training curricula,
 - set standards for ICT training programs and evaluation of skill levels, etc.
- b. Streamline the in-service training programs, provided by the public training institutes/academies, in accordance with the proposed 'Framework for ICT Users Skills'.
- c. Issue general direction to all public offices for arranging in-house training on ICT on regular basis.
- d. Increase availability of and accessibility to ICT among the members of civil service.
- e. Ensure use of available ICT by all levels of the civil servants; with particular emphasis on the senior levels. Use of ICT by the seniors would have a demonstrative and trickle down effect on the others.
- f. Rescue existing technologies from the setback of underutilization by producing assorted attempts, such as: raising awareness, aptitude, perception and attitudes of the civil servants towards diverse use of ICT in public administration, automating office procedures and workflows, etc.
- g. Prepare and circulate a set of e-governance guidelines among public officials to inform and involve them. Such guidelines should be able to outline major features of national e-governance including objectives, advantages, strategic directions, upcoming events and changes, services and benefits for citizens, management structures, contact/key persons, etc.

- h. Strengthen R&D with specific allocations and mandates among the public offices, particularly in the public sector training institutions.

4.2.2 Recommendations for Future Research

E-readiness for e-governance is a new area of study, particularly in the context of Bangladesh, which is multi-dimensional by its scope and nature. Present research is a miniature initiative that attempts to cover a tiny part only. The wide scope of the field, in contrast, the limitations of the present study generate a diversity of demands for future research. From Bangladesh perspective, some of those may include:

- a. Investigation on the multi-angled strategic options for implementing e-governance in the country is an immediate need, in this area.
- b. Study on the legal sector, to specify the needs and pockets for interference, is essential.
- c. A thorough study on the organizational aspects would facilitate administrative re-arrangements for integrating new technologies in the public administration, re-engineering of process and procedures, integration of back offices, creation of front offices, creation of online services, etc.
- d. Identifying the training needs, motivational issues and composing a comprehensive training plan for civil servants is necessary in the way of preparing the public work force for e-governance.
- e. Cross-perspective studies on the demand side are necessary to ensure ease and interests of the citizens in e-governance service delivery, and to bring them close to the public administration.
- f. For introducing e-governance in Bangladesh, partnerships with non-governmental actors are unavoidable. Scopes and needs are there to conduct series of studies, in this area.

4.3 CONCLUSION

As an emerging concept, e-governance has become trendy since mid 1990s around the world, with various moves by the governments integrating information and communication technologies in the public sector management and in the process of delivering services for citizens. However, the growth and status of e-governance varies from country to country regarding degree of their preparedness that relates to availability, accessibility and the nature and level of use of e-governance tools by the civil servants in respect of providing services at the needs and ease of citizens. This study notes that regarding preparedness, members of the Bangladesh Civil Service show considerable strengths for e-governance in respect of their interest and adaptability to new technologies; also in respect of their levels of awareness and attitude towards e-governance. At the same time, they pose to a low level of ICT aptitude. Besides, use of ICT by the civil servants is often locked up with word processing and other elementary applications. Robust training and motivational program can erect a brilliant supply side for e-governance service delivery in Bangladesh.

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