

E-Governance for better service delivery in public sector: Experience of implementing National E-Service System (NESS) in the Deputy Commissioners' Office in Bangladesh

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Abstract

This research focuses on e-governance for better service delivery in public sector especially in Bangladesh. The aim of the research is to investigate the role of e-governance regarding service delivery provided by the Deputy Commissioners' office in Bangladesh through National E-Service System (NESS) considering with the experiences of government officials. The objectives of the study are to identify the experience of implementing NESS, to find out the impact of NESS in delivering public services to the citizens and whether e-governance is effective or not for delivering better services to the citizens.

For conducting this research eight respondents have been selected from four Deputy Commissioners' office. The study has been conducted through qualitative method followed by interpretivist philosophy with an inductive approach. The semi-structured interview questions were used and exploratory strategy has been followed by the researcher to collect data from the eight respondents.

The findings and results of this study showed that there were some limitations and challenges of implementing NESS in the initial stage such as lack of knowledge and skills of the employees and infrastructure facilities, attitudinal problem etc. Still there exist some problems in the rural areas for getting full benefits from NESS by the service receivers such as incapacity of rural people to use ICT and intervention of middlemen. But the overall outcomes of NESS are that it is providing a lot of benefits such as increasing transparency, efficiency and accountability; reducing corruption; saving time, cost and visit; improving customer satisfaction; easy access and monitoring etc. to the service receivers as well as the service providers. So, it can be said that NESS is playing a positive and significant role in delivering better services to the citizens of Bangladesh comparing with the traditional system of service delivery.

1.1 Introduction and background of the study

The attempt of the study is to evaluate the experience of implementing National E-Service System (NESS) in Deputy Commissioners' Office in Bangladesh regarding service delivery to the citizens of Bangladesh. In the traditional form of service delivery system in the public administration in Bangladesh was paper based long-term procedures and it dissatisfied the citizens regarding the delay in service delivery and there was also corruption in providing service to the citizen (Karim 2015).

As Bangladesh is an over populated country so it is very difficult for the service providers to ensure better service following the traditional method which is paper based long term bureaucratic system. Because the traditional system is inflexible and labour intensive so it takes long time to provide services and due to shortage of sufficient staffs as well as infrastructural facilities government offices are not capable to satisfy the increasing demand of services from the growing population (a2i 2013).

To improve that situation of service delivery Bangladesh government has taken the initiatives for providing better services to the citizens through e-governance system using online. For providing better services to the citizens of Bangladesh National e-Service System (NESS) in the District e-Service Centre (DESC) located in the Deputy Commissioner's (DC) office that facilitates one stop service delivery (a2i 2013).

The 64 DESCs located all over the country was inaugurated on 14 November, 2011 and DESC has been designed to improve the accessibility and transparency of public service delivery system at the district level to attain some objectives which includes: ensuring service delivery to the citizens within a shortest possible time, keeping the rights to information of citizens through wide-ranging information stream and reducing corruption and increasing accountability through transparent processes (a2i 2013).

In Bangladesh District Administration, that means Deputy Commissioner's office is providing government services for the rural and urban people on behalf of central government over the past 200 years. The services that are provided by the DC office are: control and supervision of revenue; maintenance of public order and security; magisterial functions; control of fire arms; administration of jails; licence and certificates; land acquisitions; press and publications; census; election matters; relief and rehabilitation; social wellbeing; transport and traffic affairs; education and conduct of public examinations; public amusement; public grievances and enquiries; pension matters; inter agency matters; treasury and stamp; training functions; minority matters; family planning etc. (Cabinet division 2016).

ICT is an effective instrument that helps to provide effective service delivery to the citizens or public. UNDP (2007 cited by Salam and Islam 2013) describes that for providing sustainable delivery of services e-governance can play an important role for poor society and keep accountable both the policy makers and service providers.

1.2 Aim

The aim of the research is to investigate the role of e-governance regarding service delivery implemented by the Deputy Commissioners' Office in Bangladesh through NESS with considering the experiences from government officials.

1.3 Objectives

The objectives of the research are-

- to identify the experience of implementing NESS in the DC office.
- to find out the impact of NESS in delivering public services to the citizens.
- to study about the experience of delivering services to the citizens through NESS.
- to know from the experience whether e-Governance is effective or not for delivering better service to the citizens.

1.4 Research questions relating to level of service delivery

The study has tried to answer the following research questions:

- How promptly public services are provided by the DC office through NESS in considering with traditional system?
- Has NESS made a significant impact on better service delivery through the DC office in Bangladesh?

1.5 Rational or justification of the research

The research has some justifications or rationalities. The justifications are as given below:

- i. **Academic:** This study will help the academicians for obtaining knowledge and gathering some ideas regarding service delivery through e-governance projects. Kasubiene and Vanagas (2007) said that, e-governance is a new scope of research and the aspect of service quality of e-governance is even more important for research. So, this study will help the researchers to conduct further research relating to this area.
- ii. **Business/Practitioner:** The information attained from this study will give proper direction for managers of e-government to improve the implementation of e-governance system for service delivery. This study will also help the government of different countries for taking initiatives of e-governance systems. This study will also help the government employees of Bangladesh for improving efficiency regarding service delivery.
- iii. **Personal:** This study will help the researcher to understand about different terms of e-governance and give a lot of ideas of conducting research. It will also help the researcher for doing Ph.D. in future and it will help to build up his career in this sector.

2.1 Concept of E-Governance and E-Government

According to Pani and Mishra (2009) government related to the achievement of public interest of the society while governance describes the link between government and other political, social and administrative environment. Governance is the process through which decisions are made and implemented that means it is related with the policy formulation and execution. On the other hand, government is one of the actors in governance.

2.2.1 E-Governance

E-Governance means the use of information and communication technology by the government to ensure transparency, accountability, effectiveness and efficiency in the government organisations for delivering better services to the citizens (Alam 2012).

Drucker (2001 cited by Rokhman 2011) said that E-governance is the application of information and communication technology that helps government and public administration to perform their activities.

The aim of establishing e-governance is to ensure good governance and good governance is categorised by involvement, accountability and transparency. E-governance is performed by IT in order to enable an

efficient, prompt and translucent process of circulating information to the public and other agencies (UNESCO 2005).

Budhiraja (2003 cited by Naz 2009) defined e-governance as the application of IT to the organisational functions of government for the purpose of ensuring Simple, Moral, Accountable, Responsive and Transparent governance. She also called it SMART governance. So, e-governance is the combination of three things, which are people, information technology and government.

Typically, e-governance relating to delivery of public services to the citizens through electronically. Delivery of public services exist between the government representatives and the general people to whom the government services are provided to. Any mechanism of effective delivery of public service must eventually indicate to good governance (Salam and Islam 2013).

Jain and Ramani (2005) said that, e-governance is the involvement of citizen with the activities and services of government and it covers the activities and services for almost all segments of the society. They also said that e-governance improve the transparency, integrity and efficiency of the government functions and services to the citizen by ensuring the easy access to the information.

Pani and Mishra (2009) said that e-governance related with the delivery of public services and information to the public through electronically and e-governance applies ICT to the process of administration and it does not mean that computerisation of the total administration but means a fundamental change in operation of government.

2.2.2 E-Government

E-government is a narrower term considering with e-governance. Pani and Mishra (2009) said that e-government is considered with a narrower discipline that deals with the development of online services to the citizen which includes e-tax, e-health, e-procurement, e-transportation etc.

Fraga (2001 cited by Nkwe 2012) said that e-government is the transformation of relationships between internal and external sector of government through internet, information technology and communications in order to improve the constituency participation and the delivery systems of service by the government to its society.

2.3 Domains of E-governance Application

Productive use of information and communication technology has been facilitated by e-governance that establish relationship among the citizens, businesses and different organs of government. According to Heeks (2001), there are three main domains of e-governance which includes e-Administration; e-Citizens and e- Services; and e-Society. The main objective of e-administration is to improve the working capacity of public sector by reducing process costs, to improve the internal performance, making strategic communications within different government organs and creating empowerment through transferring power, authority and resources. E-service helps to improve the communications with the citizens by talking to citizens and listening to citizens. It also helps to improve the delivery of public services regarding with quality, convenience and cost. E-Society helps to build external interactions and relationships between government organisations and other institutions. It also helps to work better with government and business, developing communities and building partnerships through institutional relationships (Heeks 2001).

2.4 Components of E-Governance

E-governance interacts with different groups and organisations. According to Backus (2001) e-governance interact with three different groups, including (i) government to citizens (G2C) that improves relationship between the government and citizens, (ii) government to government (G2G) that improves inter groups or organisations' relationships and (iii) government to business (G2B) that establishes effective relationship between the government and business enterprises. The component of e-governance creates a link between the government and citizens for the purpose of ensuring better and efficient delivery of public services and it helps citizens to get more benefit from it. In G2C government provides one-stop, on-line access to information and services to the citizens. It also helps to increase the availability and openness of getting

public services and try to improve the quality of public services. The primary objective of this activity is to create friendly environment between the government and citizens regarding delivery of public services.

2.5 A Four Phase Model of E-Governance

Backus (2001) said that a four-phase e-governance model was developed by an international e-business research consultancy firm named Gartner in 2000. This model has four phases which linked with the development of computer technology, networking of computers and communication systems. This model shows that e-governance will mature after fulfilling these four stages. The delivery of online services and use of information and communication technologies in government functions serve one or more of the features of e-governance in each of the four phases. These phases include information, interaction, transaction and transformation. The universal e-governance maturity stages and its meaning are as shown below using a table.

Stages	Meanings
Information	In this phase the relevant information is provided to the general public through websites and it is similar with the brochure or leaflet. It improves transparency and accountability in service delivery through ensuring quality of service delivery; easy accessibility and availability.
Interaction	In this phase, the e-government provides interaction between government and citizens with various applications. In this stage citizens can search any kind of information related with the government services, download any types of government forms or documents, and ask any questions to the public servants through online via email or website. In this stage the general public also apply online for jobs and different services that saves time and cost. This also helps to achieve efficiency and effectiveness because most of the services are processed through online.
Transactional	In this phase, technological complexities are increased and dealings can be made without going to the office, for example online passport and visa application, online voting etc. In this stage government provides safe transactions with a high level of authorization through online process which saves time, money and paper.
Transformational	In the transformational phase all information is integrated or gathered at one counter where public can get all services which saves time, cost and visit and will ensure transparent, better and effective delivery of public services. In this stage the government or public services are made available online to stakeholders around the clock.

2.6.1 Opportunities and Benefits of E-Governance

According to Ndou (2004) there are a lot of benefits or opportunities of e-governance and these are the same in developing countries and developed countries although many imminent benefits are not utilised by the developing countries because of limited use of e-governance. She identified the following main opportunities of e-governance.

- i. It reduces cost and ensures efficiency
- ii. It ensures excellence of service delivery for customers and businesses
- iii. Improve accountability and transparency by reducing corruption
- iv. Increase the capability of government
- v. It creates new and reliable network for the community
- vi. Help to improve the perfection of making decision
- vii. Encourage other sectors of the society to use ICT

After assessing the results of 12 e-government projects in developing countries Bhatnagar (2004) found that e-governance has provided substantive benefits by reducing corruption, increasing transparency, improving service delivery, enhancing economic goals of good governance through empowering people.

John et al. (2005 cited by Kettani and Moulin 2014) said that by implementing e-governance development targets, Malaysia is becoming a role model of developing nation.

Bertucci and Alberta (2003) said that e-governance can reform the governance system and public administration by effective and efficient public management that ensure more access and provide quality information to the citizen to build participative and interactive partnership of governance through better service delivery.

According to Kettani and Moulin (2014) by reducing the required amount of input resources, e-government effects the value chain of government organizations which ensures less physical effort from more limited workforce that reduce time regarding delivery of services, increasing output by increasing number of services and improving outcomes by improving the quality of delivery of services.

United Nations (2008) describes a number of internal and external gains generated from e-governance which includes the following:

Internal gains generated by e-governance

- It helps to avoid duplication
- Reduce transaction costs
- Shorten bureaucratic process
- Provide improved efficiency
- Ensure better communication and coordination
- Enriched transparency
- Help to sharing information among agencies
- Ensure information management security

External gains generated by e-governance

- Quicker delivery of service
- Greater efficiency
- Ensure flexibility of delivering service
- Invention in service delivery
- Greater involvement
- Better empowerment of citizen
- participation of citizen

2.6.2 Challenges and Risks of e-governance

There are different challenges and risks of successful implementation of e-governance initiatives. According to Ndou (2004) the main challenges of development and implementation of e-governance includes the following:

- i. Lack of infrastructural facilities which includes insufficient IT equipment, computer literacy, e-readiness etc.
- ii. Improper rules, regulations and other policy issues.
- iii. Shortage of development of human capital and ultimate learning which includes education, skills, technical capabilities and learning.
- iv. Showing negative attitude to change management and resistance to change.
- v. Weak collaboration and partnership with public or private organisations and community and fail to create network among them.
- vi. Wrong vision, mission and strategy.
- vii. Leadership role is not appropriate to influence, motivate, support and involve the participants.

Hanna (2010 cited by Kettani and Moulin 2014) identified a number of risks of e-governance which includes the following:

- Attitudinal positions of government officials with respect to information and communication technology.
- Underestimate the organizational performances and consequences of ICT decisions.

- Lack of organizational capacity and capability to manage effectively of public-private partnerships (PPP).
- Lack of managerial strengths.
- Participatory approaches implemented poorly.
- Inherent risks to a supply-driven e-government context.

Alshehri and Drew (2010) said that for implementing e-government we face different barriers and challenges that can delay the progress. They categorised these barriers as technical, organisational, social and financial which includes ICT infrastructure, security and privacy, resistance to change to electronic ways, support of top management, collaboration, lack of skilled personnel and training, culture, digital divide and other financial barriers.

Heeks (2003 cited by Dada 2006) argued that in developing countries most implementations of e-government have failed and the rate of total failure is 35% because of limited number of resources they have and wastefully spend large amounts of money for these projects.

2.7 Other critical views of e-governance

There are also some other critical views of e-governance which are found from different researches.

Ciborra (2005) said that receiving of e-governance in developing countries is highly questionable and, in these countries, good governance is not always the outcome of e-government. He argued that transparency and accountability will not come automatically from the military or bureaucratic administrations. Using a case study on e-government implementation in Jordan he wonders that developing countries are not ready to treat the citizens as customers but in these countries the citizens of privileged areas may have access to the service more easily and in the form of bribery or favouritism corruption may be continued and offered to new intermediaries.

Baptista (2005) argued that e-government has the possibility to transform governance and to establish the relationship between state, citizens and organisations. But the overall performance to good governance usually remains unclear in terms of public services and also return on investment. Because a considerable amount of government funds is invested in e-governance projects.

Basu (2004) said that despite of the availability of infrastructure in developing countries many people do not have any access to IT because of a large gap between educated people who have the ability to use technology and the uneducated poor people who do not have any ability to use technology.

2.8 E-Governance: Service Delivery Approaches

There are two types of service delivery approaches of e-governance including agency-centric approach and citizen-centric approach. Shapiro (1999) said that the modern governments are shifted from the traditional agency-centric approach to citizen-centric approach for delivering of public services. Salam and Islam (2013) stated that citizen-centric approach is more realistic approach for providing public services and it creates an opportunity to interact between the government and citizens.

Agency-Centric Approach

Another name of agency-centric approach of e-governance is department-centric approach. In agency centric approach it is necessary for the citizens to interact with each department separately that creates inefficiency and inconvenience for getting service and it requires separate approval from each department that time consuming and expensive for getting proper service (Al-Khouri 2011).

Citizen-Centric Approach

Citizen-centric approach helps government to be efficient for the purpose of providing better service to the citizens that creates citizen satisfaction and improve the quality of life for getting government services (Mehra 2004).

Gronlund (2002) said that providing service through citizen-centric approach government can able to increase trust, transparency and accountability from the view of citizens and in this approach, government thinks about the process of service delivery through citizens' view point rather than operational or any other means.

Citizen-centric approach helps to avoid duplication for delivery of services. It is concerned with the rethinking of service delivery system through citizen perspective that reduces time and minimizes long bureaucratic procedures or hierarchies of government (Salam 2012 cited by Salam and Islam 2013).

2.9 Empirical Studies on E-governance for better service delivery

Many researchers have conducted different studies regarding e-governance and tried to assess the effectiveness of e-governance for delivering better public services both developed and developing countries. Some studies relating to this issue are as discussed below.

2.9.1 E-Governance and Public Service Delivery

E-governance related with the delivery of public services that are provided through electronically. It creates a relationship between the government entities and the citizens. It also provides different government related information and services to the citizens in more transparent way and facilitates citizen empowerment and simplifies the delivery of public services (Bhatnagar 2014).

Tapscott and Caston (1993) said that information and communication technology has initiated change in delivery of public service both in principles and mode. Paper based documentation and face to face interaction of bureaucratic system has moved to electronic interchange and non-interpersonal interaction. Impartiality, standardization and equity principles have been established by user customization.

Harris (2000 cited by Salam and Islam 2013) argued that ICT plays a key role to support good governance as it increases accountability, transparency and thus help to minimize the operational expense of government.

2.9.2 Service Quality and Customer Satisfaction

E-service facilitates easy flow of information that provides different experience to the customers regarding better service from the government organisations. Different studies have conducted by the researchers regarding traditional service versus e-service to find out quality dimensions of providing public service.

Field et al. (2004) said that for providing better services to the citizens e-service can play a crucial role that increase customer satisfaction, building trust and ensure competitive success for the organisations.

Dabholkar (1996) conducted research work on the quality of e-service which is very much interrelated with web site design and he identified seven basic elements that helps to increase the quality of e-service, including design of the website, accessibility, reliability, ease of use, enjoyment, delivery and control.

With the comparison of the quality of traditional service delivery to the electronic service delivery system Cox and Dale (2001) find out six criteria that helps to improve the quality of online service delivery including appearance of website, accessibility, ease of communication, availability, credibility and understandable to the customers.

Saha and Zoha (2005 cited by Doost and Ashrafi 2014) said that one of the major issues of every organisation is to provide better quality of service that ensure customer satisfaction. They also said that customer satisfaction is the combination of psychological relations to the experience of consumption or adaptability with a product or service, customers' evaluation and perception.

Kalsi et al. (2009) mentioned that citizens may be directly benefitted from the initiatives of e-government as they have direct transactions with the services provided by the government.

A study was conducted by Al-Tarawneh (2012) on quality of e- service and customer perception, which indicates that customer's perception of quality of e-service is influenced by website design, ease of use, responsiveness, security and personalization.

Salam and Islam (2013) said that, better delivery of public service is the key foundation of any popularly elected government for their existence and they take several programs for bringing changes within their

prevailing conventional and procedural governmental systems and for the purpose of achieving the reliance from its citizens they try to deliver better public services.

3.1 Methodology

Research methodology is a systematic and scientific process including different steps that helps to solve any research problem. Every researcher should know not only the techniques or methods of research but also about the methodology of research (Kothari 2004).

According to Collins and Hussey (2003), methodology is the key factor for conducting any research. Methodology highlights the principles and methods of the scope of research through critical discussion and where principles can be considered as the fundamental philosophy of the research (Horn 2012). Saunders et al. (2009) said that research methodology is a process which has different outside and inside layers looks like an onion including research philosophies, approaches, strategies, choices of methods, time horizons and the research techniques and procedures that has been followed step by step by the researchers to conduct research.

3.2 Research philosophy

Research philosophy is important for any kind of research because it shows the way in which the researcher views the world. Saunders et al. (2009) said that research philosophy can influence the particular view of the researchers regarding the relationship between the knowledge and the process by which the research developed. According to Johnson and Clark (2006 cited by Saunders et al. 2009) researchers should be aware of the philosophical commitments because it has significant impact on the study that they are investigating. There are different philosophical perspectives of conducting research such as positivism, realism, pragmatism and interpretivism (Saunders et al. 2009).

This study has been conducted through interpretivism philosophy because the aim of this philosophy is to understand the meanings and realities regarding participation of the members in the social processes who are working in a social group and also to understand their views and intentions to generate social actions (Orlikowski and Baroudi 1991). Saunders et al. (2009) said that interpretivism philosophy helps the researcher to understand the roles of individuals as social actors and it is useful for in-depth investigations where small samples are taken for the purpose of qualitative research. They also argued that for business and management research especially in the field of human resource management, organisational behaviour and marketing this type of philosophy is highly appropriate.

As the study has been conducted to find out the real situation, in-depth investigations and the roles of government officials regarding service delivery in the Deputy Commissioners' Office in Bangladesh through NESS that is why interpretivism philosophy has been followed.

3.3 Research Approach

There are two types of research approach. These are- inductive approach and deductive approach. Inductive approach has been applied in this research because this approach helps to find out the real situation of the research field and helps to understand the better scope of the problem (Saunders et al. 2009). This approach is opposite from the deductive approach and also called the bottom-up approach. According to Flick (2011), inductive approach is applied where interviews are conducted concerning particular phenomena and data are being examined for arrangements among respondents. Inductive approach underlines to gain an understanding of the meanings where humans are attached to a specific event and this approach is more appropriate where a small number of samples are used for conducting research (Saunders et al. 2009).

This study has been conducted through inductive approach because in this research the researcher has been tried to find out the real situation of e-governance system regarding service delivery from the experience of government officials who are working in the Deputy Commissioner's office in Bangladesh. In addition to that as this study has been conducted with a small number of samples that is why inductive approach has been applied.

3.4 Research Method

There are two main methods of business and management research such as quantitative method and qualitative method. In this research qualitative method has been chosen to investigate the role of e-governance regarding service delivery implemented by the Deputy Commissioners' Office in Bangladesh through NESS with considering the experiences from government officials.

Daymon and Holloway (2011) said that in qualitative study respondents are participated not only to furnish data but also in some extent to interpret it and in case of interviews in qualitative study the researcher can encourage and penetrate the participants to tell something details about the topic.

Qualitative research presumes that human beings understand and tends to narrate things from their mind cognitively. Qualitative methods allow people to express their assumptions, opinions, understandings, desires and beliefs. This method facilitates to deliver perspectives, such as one-to-one interviewing by which the respondents can express their assumptions and understandings. Analysis of such data requires to explain these assumptions, understandings and beliefs in a broader social perspective (Horn 2012).

Holloway and Wheeler (2010) argued that qualitative research facilitates to describe, understand and interpret the social spectacles assumed by cultures, groups or individuals. This method is applicable to discover the experiences, feelings and behaviour of people which is an integral part of their lives.

According to Bryman and Bell (2011) qualitative research gives emphasis to the words rather than quantification of data which predominantly gives priority on inductive approach between theory and research.

In this study qualitative approach has been applied because of finding, understanding and exploring the beliefs, assumptions, and experiences of government officials of implementing NESS for providing public services to the citizens through DC office. In qualitative approach the respondents have some freedom to give arguments of a certain topic which is conducted through in-depth interview. So, for generating idea regarding delivery of public services through NESS provided by the DC office this approach has helped the researcher to find out the real situation. By applying qualitative approach through interview method, the respondents have been got more benefits and flexibility for giving their opinion regarding implementing NESS for the purpose of providing better service and they have also given their arguments according to their individual experiences whether e-governance system in the public sector is appropriate or not for providing better service delivery to the citizens.

3.5 Research Strategy

Research strategy is a general plan followed by the researcher to gather data for the purpose of answering research questions that meet the research objectives and providing results. Saunders et al. (2009) described three types of research strategies which include exploratory, descriptive and explanatory. They also described different types of strategies for generating research data including survey, experiment, action research, case study, ethnography, grounded theory, archival research etc. Bryman and Bell (2011) said that it is necessary for the researcher to apply appropriate research strategy so that it can make a connection with the research philosophy, research approach and methods of the research that has already been selected by the researcher and to give emphasis on the research aims, objectives and research questions.

In this study exploratory strategy has been followed by the researcher and considered more effective to explore the actual situation of e-governance regarding service delivery provided by the Deputy Commissioner's office in Bangladesh. Exploratory strategy has been followed because it helps the researcher to find out what is happening inside, seeking new insights, asking questions and assessing phenomena in a new light (Robson 2002 cited by Saunders et al. 2009). Saunders et al. (2009) said that there are three main ways of conducting exploratory research which includes searching of literature, conducting interview with the subject experts and the focus group.

3.6 Method of data collection

For conducting any types of research, it is necessary to collect relevant data. There are two types of data including primary data and secondary data. Primary data is the first-hand information that is collected through interview, survey, census etc. Secondary data are collected through journal articles, books, internet or website, research documents etc.

In this research both types of data have been collected for conducting the research properly. The secondary data has been used for the purpose of literature review and generating research themes which has also

been developed through interview. The primary data of this research has been collected through semi-structured questions.

According to Bryman and Bell (2011), semi-structured question usually refers to a situation in which the interviewer has a series of questions that are in the general form of interview schedule but is able to vary the sequence of questions. Saunders et al. (2009) said that there are three types of interviews including structured, semi-structured and unstructured or in-depth interviews which are used for collecting primary data.

In this study semi-structured interview method has been chosen by the researcher for collecting primary data because semi-structured interview is referred for qualitative research and in this type of interview the researchers have a list of themes and questions where the sequence of questions may vary from interview to interview depending on the situation, organisational context and the flow of conversation (Saunders et al. 2009). Semi-structured interview also provides opportunity to the researchers to probe answers and it allows the interviewees to give explanation on a certain topic and also gives flexibility for answering questions that helps the researcher to generate themes and it is useful for exploratory research where interpretivist philosophy has been followed (Saunders et al. 2009).

As this study is a qualitative, exploratory study and follow interpretivism to find out the actual situation of service delivery through NESS provided by the Deputy Commissioner's Office in Bangladesh so, semi-structured interview method has been applied. The semi-structured interview has been conducted by the researcher with the respondents through one-to-one interview via mobile phone or Skype because the interviewees are working in Bangladesh and it was convenient for both the interviewer and interviewees in terms of time and cost and it was also useful for recording data promptly and easily. The conversation of each interview took 30 to 40 minutes.

For collecting data interview method seems to be more suitable and effective for this study because the aim of the study is to investigate the role of e-governance regarding service delivery from the experiences of government officials who are working in the DC office in Bangladesh rather than test a theory. The interview method has also helped the researcher to collect narrative data to generate themes and to interpret the facts and findings easily.

3.7 Language and design of questions

The questions have been designed to fulfil the research aim and objectives and to get answers of the research questions and also to explore the key themes of the research that will be explored through interview. The language of questions was in English language because the respondents who have been selected are good at English and high academic qualification that means all respondent has Master's degree from renowned universities.

3.8 Sampling Design and Technique

Sampling design and technique is very much important for conducting research as it is not possible to collect data from the entire population. The appropriateness and effectiveness of data collection from the representative sample of population depends on the selection of appropriate sampling technique (Saunders et al. 2009). There are two major types of sampling technique including probability sampling and non-probability sampling and each type divided into different categories.

There are 8 Administrative Divisions and 64 Districts in Bangladesh (Bangladesh National Portal 2016). Each 64 district has one Deputy Commissioner's Office called District Administration. In this research out of 64 Deputy Commissioner Offices operating in 8 Divisions in Bangladesh first of all 4 Divisions have been selected which are Dhaka, Rangpur, Sylhet and Rajshahi and then from 4 Divisions out of 33 DC offices 4 DC offices have been selected through multi stage random sampling method respectively to conduct the study. The selected districts were Dhaka, Rangpur, Sylhet and Naogaon from the divisions of Dhaka, Rangpur, Sylhet and Rajshahi respectively.

In district administration a number of government officials work as a representative of central government headed by the Deputy Commissioner (DC). There are some Additional Deputy Commissioners (ADC) and some Assistant/Senior Assistant Commissioners (AC/SAC) with specific tasks work in the DC office. All the officers come from the Bangladesh Civil Service Administration cadre where ADCs assist DC and

AC/SACs assist DC through ADCs. In this study for selecting respondents from the government officials of DC office purposive sampling method has been followed. Because the respondents who took part as service provider and directly involved with ICT operation have been preferred and who have come from Bangladesh Civil Service and posted as Additional Deputy Commissioner and Assistant Commissioner in the DC office equivalent to Deputy Secretary/Senior Assistant Secretary and Assistant Secretary to the government.

Saunders et al. (2009) said that purposive sampling is used where a very small number of samples are taken by the researcher and where the respondents are very much involved with specific tasks that help them to give answer of the questions in the time of interviewing. This type of sampling helps the researcher to collect data to answer research questions and meet the requirement of research objectives and themes. In this study 8 respondents have been selected from 4 Deputy Commissioners' Office. That means, in every DC office one Additional Deputy Commissioner (ADC) and one Assistant Commissioner (AC) have been selected as respondents.

3.9 Pilot Study

A pilot study has been taken by the researcher to eliminate any ambiguity about the questions and to understand how it works with the aims and objectives of the research. After that the researcher decided to proceed on and conducted the main study.

3.10 Data analysis

According to verbatim the conversations with the interviewees has been transcribed. After that the collected data has been analysed according to the aim and objectives of the study through coding method to answer the research questions and then common codes have been selected for analysis. The relevant theories have also been considered for interpreting the data to make the result more appropriate and reliable.

3.11 Validity and Reliability

Every researcher should be more careful about the validity and reliability of data that they are collecting because it is very important for conducting research. In this study the researcher has always given priority to the relevancy of data. The primary data of this study has been collected and analysed within a very short time for ensuring reliability and validity. As the respondents of this study were government employees and worked in the relevant field of this research and also had maximum educational qualification so, they answered the questions easily, smoothly and confidently. The secondary data of this study has been collected from the reliable sources like renowned journals, reference books, relevant websites etc. to develop literature review of this study and avoided those types of data that made confusion regarding with relevancy. So, in this research the researcher was always careful about the validity, reliability and quality of data.

3.12 Ethical Consideration

Every researcher should be careful about the ethics for conducting any type of research including ethical concern of the respondents when they collect data. Saunders et al. (2009) said that research ethics related with the questions about how a researcher formulate and clarify research topic, research design, methods of data collection, process, store and analyse, and how to write research findings and preparing research results. In this study, before conducting interview, the interviewees have been informed by the interviewer about the purpose of the study and it has been conducted with the prior consent from them and after collecting data the researcher stored and analysed it very carefully for the purpose of maintaining maximum reliability. The BU Research Ethics Code of Practice has also been followed and complied in this research.

3.13 Limitations

There are always some limitations for conducting any type of research (Yin 2012) and this study is not the exception from that idea. The limitations may include regarding time, quality, budget, availability of resources, insufficient knowledge about the research area etc. In this study there were also some limitations. For example, this study has been conducted only in the DC office but there are so many government offices in Bangladesh which are implementing e-governance. Besides this, there were also a limitation of time to conduct the research.

In summary it can be said that in this study the researcher has followed interpretivism philosophy with an inductive approach, applied qualitative method, exploratory strategy and semi-structured interview questions for collection of data. The sampling technique of this study was multi stage random sampling for

selecting Division and District of Bangladesh respectively and purposive sampling for selecting the respondents. A pilot study was also conducted by the researcher before going to the final study.

4.1 Research Findings

From the interviews a number of key themes have been derived. In this study the researcher has conducted eight interviews with the eight participants those are working in four different Deputy Commissioners' office in Bangladesh. Before conducting final interview, the researcher also conducted a pilot interview to understand how the interview questions work to fulfil the aims and objectives of this study and then he decided to proceed on and conducted final interviews.

A number of key themes have been developed by the researcher for the purpose of presenting the results of this study and the key themes of this research have been developed under the consideration of research objectives and from the common codes of the answers of the interviewees. There are fifteen key themes have been developed in this study which are as follows:

1. Increased efficiency, transparency and accountability
2. Improved customer satisfaction
3. Reducing corruption
4. Saving time, cost and visit
5. Prompt delivery of services
6. Improve quality of decision making
7. Breaking long bureaucratic system
8. Citizen centric service
9. Building trust
10. Easy access and monitoring
11. Incapacity of rural people to use ICT
12. Intervention of middlemen
13. Lack of knowledge and skills of the employees
14. Lack of infrastructure facilities
15. Attitudinal problem

The following table shows the linking of key themes with the related interviewees with percentage of respondents:

Sl. No	Key themes	Serial no. of related interviewees from where the themes derived	Total no. of interviewees	Percentage
1	Increased efficiency, transparency and accountability	1,2,4,5,6,7,8	7	87.5%
2	Improved customer satisfaction	1,2,3,5,6,8	6	75%
3	Reducing corruption	1,2,5,6,7,8	6	75%
4	Saving time, cost and visit	1,2,3,4,5,7,8	7	87.5%
5	Prompt delivery of services	1,2,3,4,5,7,8	7	87.5%
6	Improve quality of decision making	1,2,3,4,6	5	62.5%
7	Breaking long bureaucratic system	1,2,3,5,6	5	62.5%
8	Citizen centric service	1,2,3,4,5,6,7	7	87.5%
9	Building trust	1,3,4,5,6	5	62.5%
10	Easy access and monitoring	1,2,4,5,7,8	6	75%
11	Incapacity of rural people to use ICT	1,2,3,6,7,8	6	75%
12	Intervention of middlemen	1,3,4,5,6	5	62.5%
13	Lack of knowledge and skills of the employees	1,2,4,5,6,7	6	75%
14	Lack of infrastructure facilities	1,2,3,5,6,7,8	7	87.5%
15	Attitudinal problem	1,3,4,5,6,7,8	7	87.5%

Table: Linking of key themes with related interviewees

The description of these key themes is as given below:

4.1.1 Increased efficiency, transparency and accountability

The important objectives of e-governance are to increase efficiency, transparency and accountability for the purpose of providing better service to the citizens. As NESS has applied in the means of e-governance in the Deputy Commissioner's office in Bangladesh so the main motto of NESS is to increase efficiency, transparency and accountability to deliver better public services to the citizens. In this study out of 8 participants 7 participants that means around 88% of the interviewees have given their opinion that NESS has ensured efficiency, transparency and accountability.

4.1.2 Improved customer satisfaction

Now a day's customer satisfaction is one of the major issues of service provider because every organisation wants to improve customer satisfaction by providing better service because it helps to improve the goodwill as well as improve the reputation of the organisation. To improve customer satisfaction e-governance system is a useful tool. In this study 6 participants that mean 75% of the total participants said that by applying NESS in the DC office service receivers get hassle free services that make them satisfied.

4.1.3 Reducing corruption

In developing country like Bangladesh corruption is one of the main problems in government offices. In the traditional form of service delivery, the lower-level employees and the middlemen tried to earn money in the form of bribe from the service seekers to give services. But by introducing NESS this type of corruption has been minimised because as this system is fully computerised and internet based so there is no physical meeting is required for getting a service.

Out of 8 interviewees 6 interviewees that mean 75% of the interviewees have given their arguments that in traditional form of service delivery the corrupted staffs were very much interested about the files from where they get illegal benefit rather than normal file. As a result, general people did not get their service in time and in that system, there was no effective monitoring system that ensures to keep in touch all the files by the higher authority. But in this system for effective monitoring this type of corruption has been minimised.

4.1.4 Saving time, cost and visit

One of the objectives of e-governance is to provide better services by reducing cost. Among the 8 interviewees 7 interviewees that means almost 88% of the total respondents have mentioned that as in this system people can apply through online from everywhere and can get necessary information from the websites of the concerned office so it is not mandatory and necessary to come in the office physically which has reduced their conveyance cost and as well as other process costs. They also said that in traditional system people came to office first for getting the information and procedure to get a specific service and after collecting that information they again came to office with necessary document and then applied for concerned service. But by the use of NESS it has become easier for them to collect information and to apply online which ultimately has saved the time of the applicants, reduced cost and number of visits in the government office.

4.1.5 Prompt delivery of services

The precondition of better service is to prompt delivery of services. Among the interviewees 7 interviewees that means almost 88% of the interviewees have mentioned that by introducing e-governance in the form of NESS, the Deputy Commissioner's office has able to provide faster delivery of services. Because in this system the employees can log in from anywhere and can see the file through online and give proper decision within short time which may accelerate the file disposal system. But in traditional system if the concerned employee stayed outside from the office for official visit or other purposes then the file was hanged until the officer came back to the office.

4.1.6 Improve quality of decision making

For disposing any file timely and successfully quality of decision making is important for the employees. There are 5 interviewees out of 8 interviewees that means around 63% of the respondents have given argument that by using NESS in the DC office the quality of decision making has been improved by the employees because they can get necessary information, circular, rules and regulation from the website and can see easily the previous decision regarding the same matter which can help them to decide and give opinion quickly.

4.1.7 Breaking long bureaucratic system

There are 5 interviewees that means around 63% of the total interviewees said that in traditional system the government organisations in Bangladesh followed long bureaucratic system which took long time to process a file or service and, in that system, customers were not satisfied about the procedure of getting a service. But in the present system of service delivery that means by applying NESS the government

employees can give their decision on a matter from anywhere by using internet. Although it follows the bureaucratic system but with the help of technology they can give their decision quickly.

4.1.8 Citizen centric service

Out of 8 respondents 7 respondents that mean almost 88% of the respondents have mentioned that NESS has created positive relationship between the government employees and the service recipients because one of the major objectives of NESS is to satisfy the citizens. Since people are getting timely service and government is always trying to provide better service so, certainly it is a citizen centric service system.

4.1.9 Building trust

Now a day's, it is one of the toughest tasks to build trust among the people. In this study out of 8 interviewees there are 5 interviewees that means around 63% of the total interviewees said that NESS replaced the traditional system of service delivery because of building trust and ensure customer satisfaction by giving better service in the easiest way. As this system is transparent and informative so people has accepted it from their heart.

4.1.10 Easy access and monitoring

Among the respondents there are 6 respondents that mean 75% of the total respondents said that in e-governance system access and monitoring is easier than any other system. They said that as e-governance that means NESS in the DC office is operated by ICT so, one can easily access to his/her account by login and can see the overall situations of dashboard and can give proper direction and feedback to the concerned officials about the file disposal. In addition to that customer can easily track about the position of their esteemed service or can collect necessary information easily from the website.

4.1.11 Incapacity of rural people to use ICT

Out of 8 respondents there are 6 respondents that means 75% of the total interviewees said that in the rural area of Bangladesh a considerable number of people do not know how to use computer or internet. They also said that because of poverty in Bangladesh most of the rural people have no ability to buy computer or use internet.

4.1.12 Intervention of middlemen

Among the interviewees there are 5 interviewees that mean around 63% of the respondents said that in the rural area of Bangladesh so many people are illiterate and poor and they do not know how to get a service from the DC office. As a result, they try to get help from other persons and fall into the trap of middlemen which may create some problems.

4.1.13 Lack of knowledge and skills of the employees

Out of 8 respondents there are 6 respondents that mean 75% of the interviewees said that at the initial stage the staffs in the DC office have some lacking of knowledge and skills to operate computer and internet properly. That is why on that time their performance was not up to the mark but after a certain period of time when they took training on ICT then their performance has been increased.

4.1.14 Lack of infrastructure facilities

Infrastructure is very much important to introduce a new system. In this study among the respondents there are 7 respondents that mean almost 88% of the participants said that at the very beginning they didn't have proper infrastructure facilities to implement NESS. They had shortage of computer, low speed of internet and insufficient power supply which hampered their service although it has improved now.

4.1.15 Attitudinal problem

It is human nature to show negative attitude when they found that a new system is coming up and they have to implement it. Because everybody think that they are used to the present system and it is easier to them so why they will accept a new one. In this study the same thing was happened at the initial stage. Among the respondents there are 7 respondents that means around 88% of the total respondents said that at the beginning of introducing NESS the lower-level employees showed their negative attitude about NESS.

4.2.1 Themes related with the opportunities and benefits

The following themes show the opportunities and benefits of e-governance in the form of NESS:

1. Increased efficiency, transparency and accountability
2. Improved customer satisfaction
3. Reducing corruption
4. Saving time, cost and visit
5. Prompt delivery of services
6. Improve quality of decision making

7. Breaking long bureaucratic system
8. Citizen centric service
9. Building trust
10. Easy access and monitoring

In this study the researcher has found that in implementing NESS most of the respondents said that they are getting and providing these opportunities and benefits from e-governance in the form of NESS.

If we consider these themes with the relevant literature, then we find similarities. Ndou (2004) said that there are a lot of benefits or opportunities of e-governance and these are the same in developing countries and developed countries although many potential benefits are not utilised by the developing countries because of limited use of e-governance. The opportunities that are identified by her includes cost reduction and efficiency gains, transparency, anticorruption and accountability, quality of service delivery to business and customers, improve the quality of decision making, increase the capacity of government, network and community creation, promote use of ICT in other sectors of the society.

Gronlund (2002) said that providing service through citizen-centric approach government can able to increase trust, transparency and accountability from the view of citizens and in this approach, government thinks about the process of service delivery through citizens' view point rather than operational or any other means.

In this study most of the respondents said that by introducing NESS in the form of e-governance they are getting more benefit comparing with traditional system which has increased their efficiency, transparency and accountability, and improved the quality of decision making. So, the findings of this study are very much similar with the findings of Ndou (2004) and Gronlund (2002).

Another researcher Backus (2001) said that e-governance creates a link between the government and citizens for the purpose of ensuring better and efficient delivery of public services and it helps citizens to get more benefit from it. In the component of government to citizen government provides one-stop, on-line access to information and services to the citizens. It also helps to increase the availability and openness of getting public services and try to improve the quality of public services. The primary objective of this activity is to create friendly environment between the government and citizens regarding delivery of public services.

Heeks (2001) said that e-service helps to improve the communications with the citizens by talking to citizens and listening to citizens. It also helps to improve the delivery of public services regarding with quality, convenience and cost.

Field et al. (2004) said that for providing better services to the citizens e-service can play a crucial role that increase customer satisfaction, building trust and ensure competitive success for the organisations.

Mehra (2004) argued that citizen-centric approach helps government to be efficient for the purpose of providing better service to the citizens that creates citizen satisfaction and improve the quality of life for getting government services.

In this study most of the respondents said that NESS has provided all these opportunities to the citizens and now the citizens are getting quick services which can save their time, cost and visit and as a result they become more satisfied. This also has created a trust between government and citizens. So, the findings of Backus (2001), Heeks (2001), Field et al. (2004) and Mehra (2004) are very much similar with the findings of this study.

4.2.2 Themes related with the challenges and risks

The following key themes show the challenges and risks of e-governance in the form of NESS:

1. Incapacity of rural people to use ICT
2. Intervention of middlemen
3. Lack of knowledge and skills of the employees
4. Lack of infrastructure facilities

5. Attitudinal problem

The findings of the study show that at the initial stage most of the lower-level employees have negative attitude about NESS because of their lacking of knowledge on ICT and there was also some lacking of infrastructure facilities. The respondents also mentioned some critical aspects in the rural area of Bangladesh including incapacity of rural people to use ICT and intervention of middlemen that may hamper the aim of NESS.

Ndou (2004) said that the main challenges of development and implementation of e-governance are ICT infrastructure, computer literacy, resistance to change etc.

Hanna (2010 cited by Kettani and Moulin 2014) identified a number of risks of e-governance which includes attitudinal positions of public officials with respect to ICT, organisational practices, lack of managerial strengths, participatory approaches implemented poorly etc.

Alshehri and Drew (2010) also mentioned these types of risks of e-governance which includes lack of skilled personnel, ICT infrastructure, resistance to change, financial barriers etc.

Ciborra (2005) said that developing countries are not ready to treat the citizens as customers but in these countries the citizens of privileged areas may have access to the service more easily and in the form of bribery or favouritism corruption may be continued and offered to new intermediaries.

Basu (2004) said that despite of the availability of infrastructure in developing countries many people do not have any access to IT because of a large gap between educated people who have the ability to use technology and the uneducated poor people who do not have any ability to use technology.

In this study most of the respondents said that at the initial stage in implementing NESS they faced some problems which includes with the lacking of knowledge and skills of employees and infrastructure facilities and negative attitudes of the lower level employees and still now they are facing some challenges in the rural area which includes incapacity of rural people to use ICT and intervention of middlemen and these challenges and risks are very much similar with the findings of Ndou (2004), Hanna (2010), Alshehri and Drew (2010), Ciborra (2005) and Basu (2004).

5.1 Outcomes and results

From the findings it has been found that National E-Service System (NESS) is playing a positive role in delivering better services to the citizens comparing with the traditional system. Because in this study most of the respondents said that NESS has provided a number of benefits to the citizens as well as the government. The most common benefits that are provided by NESS includes: increasing efficiency, transparency and accountability, improving customer satisfaction, reducing corruption, saving time, cost and visit, ensuring prompt delivery of services, improving quality of decision making, breaking long bureaucratic system and building trust with the citizen. If we consider these benefits with the objectives of e-governance, it is said that it ensures better services to the citizens effectively.

Although there were some challenges found in this study at the beginning of implementation of NESS which includes lack of knowledge and skills of the employees, lack of infrastructure facilities, negative attitude of the employees etc. but the government is trying to minimise these problems. In this study the respondents also mentioned some problems in the rural areas that considered as barriers for the service receivers in getting service by NESS which are incapacity to rural people to use ICT and intervention of middlemen.

The respondents mentioned some suggestions to implement NESS effectively. These suggestions are- to develop infrastructure facilities, to arrange ICT training regularly, taking necessary steps based on the feedback, to give recognition for performance etc. They said that if the government takes proper measures, then NESS will function smoothly.

But the overall findings show that NESS has a positive and significant impact to provide better services to the citizens and by NESS citizens are getting prompt services considering with traditional system.

5.2 Recommendations for practitioners

From this study the researcher has found some suggestions from the respondents to implement NESS as well as e-governance effectively specially in the public sector and if the practitioners consider these suggestions, then it will help them to get proper outcome from e-governance. The recommendations for practitioners are as given below:

5.2.1 To develop infrastructure facilities

For the purpose of proper implementation of e-governance it is necessary to develop infrastructure facilities. Without the development of infrastructure, it is difficult to get satisfactory outcome from e-governance. So, the practitioners should consider the development of infrastructure so that they can implement e-governance properly.

5.2.2 To arrange ICT training regularly

As e-governance is run by information and communication technology so it is necessary to know ICT for all level of employees so that they can handle ICT properly. For this purpose, regular training on ICT should be arranged and provided by the management to the employees and the practitioners should consider this to run e-governance effectively.

5.2.3 Taking necessary steps based on the feedback

It is necessary to collect time to time feedback from the service providers and service receivers for taking corrective measures considering on feedback. If the practitioners follow this, then it will help them to take necessary steps and to ensure better performance of e-governance.

5.2.4 To introduce recognition system for better performance

Everybody wants recognition for his performance and it is also a motivational tool to satisfy an employee to make committed to his job. If the practitioners introduce recognition system for the best performer in their organisation, then it will be easier for them to make committed of the employees and as well as to implement e-governance effectively.

5.2.5 Rules and regulations should be revised and updated

Every country has some rules and regulations on ICT and for the proper implementation of e-governance it is necessary to update these rules and regulations time to time. So, the practitioners should consider the rules and regulations related with ICT.

5.2.6 To take some initiatives on public awareness

Public awareness is very much important to introduce a new system. As e-governance is a new system for the developing countries so it is necessary for the practitioners to increase public awareness about this matter specially, in the rural area so that the rural people can get proper benefit from it.

5.3 Recommendations for further research

This study has some limitations so it can provide opportunities for the future researchers to conduct further research. As this study has conducted specially in the Deputy Commissioner's office in Bangladesh to find out the impact of e-governance in the form of NESS for providing public services to the citizens so, there are a lot of scopes to conduct researches on e-governance in different organisations including public and private organisations and in different countries. In addition to that as this study has conducted by highlighting on e-services but other researches can be conducted on different areas of e-governance for example, e-administration, e-society etc. Besides these, further research can also be conducted by taking larger samples, following quantitative method and by taking respondents from the service providers and service receivers.

Conclusions

Finally, from this research it can be said that although there were some limitations at the initial stage of implementing National E-Service System (NESS) in the Deputy Commissioners' office in Bangladesh and although the employees are still facing some barriers in the rural areas but NESS is ensuring better and prompt delivery of services to the citizens of Bangladesh considering with the traditional system of service delivery and it has a positive and significant impact of delivery of public services to the citizens.

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