

Effectiveness of E-service Delivery at the Local Level: A Study on Union Digital Centers (UDCs) in Bangladesh

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ABSTRACT OF THE STUDY

As e-governance is an important issue to ensure development in the administration of developing countries, Bangladesh has to face various challenges to get an advantage from the wave of e-governance. Our country has to overcome multiple constraints in the administration, including infrastructural development, technical capability, technical efficiency, ICT knowledge, economic and financial resources, to get a positive outcome from e-governance initiatives.

The study has been conducted on the effectiveness of e-service delivery at the Local Level in Bangladesh with a case on Union Digital Centers in Bangladesh. Bangladesh government has the vision to establish a digital Bangladesh by 2021. However, One-stop service shops have already become a general and flexible approach for delivering government services of various types worldwide. This approach makes life easier for citizens, but the efficiency of service provision has been increased by providing economically. The study has the aim to examine ‘the effectiveness of e-services delivery at the Local Level: A Study on Union Digital Centers in Bangladesh’ with special attention to existing policy and legal framework, the present structure, and management system of UDCs, the institutional capability of UDCs, and the nature of service delivery provided by Union Digital Centers.

The study finds that most of the services of UDCs are being provided manually though the government has the vision to spread services at the local level electronically. All the government services were received manually by the service recipients. All kinds of government, commercial, and information services are now being provided traditionally though e-service requires electronic service delivery for recipients delivered at home. Although people are bound to come to UDC to get government services, they need not come to UDC to get commercial and information services. The service recipient goes to the local private computer shop to bring commercial and information services because most of the UDCs do not have a photocopier machine, and those who have their photocopier machine are not working. At the same time, most of the computer accessories are too old to run.

UDC entrepreneurs have failed to bring significant levels of innovation and changes to provide and make recipients encouraged to come to the UDC to take commercial and information

service, which led to increased income. UDC entrepreneurs have low-level decision-making power. In most cases, decisions related to UDC's functions are carried out by the Union Chairman. But UDC entrepreneurs are very responsive. As soon as citizens come to the UDC, service recipient gets their services without any delay. There is no job security for the entrepreneurs of the union digital centers. UDC entrepreneurs are working at UDC as entrepreneurs. Three-fourths of UDC entrepreneurs experienced poor level internet speed. Only 6.3% opined that they have a substantial level of internet speed. Most of the photocopy machines and scanners are useless, and entrepreneurs are not enabled to deliver services. There is not recruitment and selection framework of the government of UDCs. UP Chairman hardly monitors the activities of union digital centers. Some Chairmen monitor the activities of union digital centers. External actors like Political parties, communities, and community groups have been influencing different activities in the Union Digital Center.

The study recommends formulating particular law and policy guidelines for UDCs that will help determine the recruitment, selection, and functioning of entrepreneurs in the UDCs. It is also important to stop the interference of the political actors so that entrepreneurs can work and formulate decisions independently. At the same time, politicians tend to take services free of cost. This type of political interference and free service is needed to be stopped immediately. All of the UDCs must have high-speed internet and be connected with the fiber optic cable so that they can get uninterrupted high-speed internet. At the same time, their internet cost has to be reduced.

Finally the study identified that if the problems can be solved properly, Union Digital Centers (UDCs) will be very effective to give the digital services at the local level in Bangladesh. The implications of the study on the relevant theories and practices are also considered. Furthermore, the study also identified the directions for future research.

Key Words: Effectiveness, E-services, Local Government, Union Digital Centers (UDCs), A2I- Access to Information, Information & Communication Technology (ICT).

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Acronym and Abbreviation

A2I- Access to Information

BAL- Bangladesh Awami League

BBS- Bangladesh Bureau of Statistics

BCC- Bangladesh Computer Council

BCSCL- Bangladesh Communications Satellite Company Limited

BCSL- Bangladesh Cable Shilpa Limited

BGD e-GOV CIRT- Bangladesh e-Government Computer Incident Response Team

BHTPA- Bangladesh Hi-Teck Park Authority

BPO- Bangladesh Post Office

BRIS- Birth Registration System

BSCCL- Bangladesh Submarine Cable Company Limited

BTCL- Bangladesh Telecommunications Company Ltd

BTRC- Bangladesh Telecommunication Regulatory Commission (BTRC)

CCA- Controller of Certifying Authority

CDC- City Corporation Digital Centre

CIC- Community Information Centre

DAM- Dhaka Ahsania Mission

DBBL- Dutch Bangla Bank Limited

DC- Digital Centre

DG- Digital Governance

DOT-Department of Telecommunications

DSA- Digital Security Agency

G2B- Government to Business

G2C- Government to Citizen

G2G- Government to Government

GOB- Government of Bangladesh

ICT – Information & Communication Technology

JAICA- The Japan International Cooperation Agency

LG- Local Government

MNP- Myanmar National Portal

MOF- Ministry of Finance

NDC- National Data Centre

NDMIS- National Disaster Management Information System

NDSC- National Digital Security Council

NID- National Identity Card

ODS- One Door Service

OECD-Organization for Economic Co-operation and Development

OSS – One Stop Shop

PDC- Paurashava Digital Centre

PPP- Public Private Partnership

PRDP- Participatory Rural Development Project

SARATHI- Stamp and Registration Automation with Technology and Information

SDC- Swiss Agency for Development and Cooperation

TBL- Teletalk Bangladesh Ltd.

TBL- Trust Bank Limited

TIB- Transparency International Bangladesh

TSS Telephone Shilpa Sangstha Limited

UDC- Union Digital Center

UDCC- Union Development Coordination Committee

UISC- Union Information & Service Centre

UNDP- United nations Development Program

UNO- Upazila Nirbahi Officer

UP- Union Parishad

UPZ- Upazila Parishad

USAID- United States Agency for International Development

WB- World B

Chapter One: Introduction and Background of the Study

1.1 Background and Rationale of the Study

E-governance is the latest addition for providing better services to the doorsteps of people around the globe at the earliest possible time. E-Governance is designed to ensure citizens' quicker and hassle-free access to service delivery and ensure better efficiency, transparency, accountability, and participation in the government process by using modern Information Communication Technology (ICT). E-governance focuses on the public services by using information technology in Government, Government to Government, Government to Business, and Government to Citizens as its main components (Gupta and Panzardi 2008). The field of e-governance known as Electronic Government/Digital Government/Electronic Governance, and so on has emerged in the late 1990s. Due to the exponential growth of this field, both its contents and impacts concerning other research fields and disciplines need to be explained and discussed (Gronlund and Horan 2005). The United States of America is undoubtedly a global pioneer and global leader in e-governance worldwide. The USA government has successfully managed to channelize all government information and services through a unified portal known as firstgov.gov. In the later part of 2002, the Government of the USA formulated an e-government act to promote strong leadership in information and technology activities (Pani and Mishra, 2009). Their primary objective has been focused on citizens and results. The principal emphasis was on citizen-centered, results-oriented and markets base, human capital strategic management, budget and performance integration, expansion of internet and computer use, and competitive sourcing with better financial management. The E-governance structure in the USA is based on three broader spectrums; Government to citizen (G2C), Government to businesses (G2B), Government to Government (G2G) (OJO, 2014). The UK's political constituencies, including England, Wales, Scotland, and North Ireland, took progressive initiatives to deliver e-services to citizens through their dedicated government portal (Gronlund. and Haran, 2005). The local authorities were coordinating accordingly. According to the survey, 74% of local authorities took various measures to bring changes in internal processes on e-government. A noteworthy performance in e-governance with the establishment of the 'Office of e-government' was presented by Australia to electronically deliver appropriate Commonwealth services to improve internal efficiency, transform service delivery, and engage the community (Pani and Mishra,

2009). The E-governance as prevailed in China is compatible with China's reform movement dating 1978 and conforms to the governance policies of the People the Republic of China since the founding of the state in 1949.

Consequently, China took a massive investment in e-governance, around one trillion yuan (around \$121 billion US). Chinese Government conducted various projects for the promotion of e-governance. The primary purpose of this project was to strengthen the central Government, enterprises, and citizens (Pani and Mishra, 2009). The concept of e-Government founded in Singapore took six cross-connecting dimensions, which includes "(i) Knowledge-based Workplace; (ii) Infocomm Education; (iii) Electronic Services Delivery; (iv) Technology Experimentation; (v) Adaptive and Robust Infocomm Infrastructure; and (vi) Operational Efficiency Improvement" (Ha and Coghill, 2008, pp.108). Singapore, as a leading Asian country in e-governance, took initiatives for promoting e-government structures. To describe the existing e-government and e-governance structure, the Singapore government recently initiated two initiatives: notions of corporatism and communitarianism and the concept of symmetry and asymmetry in communication (Sriramesh and Rivera-Sánchez, 2006).

Being inspired by the success of different countries, the Government of Bangladesh has taken series of initiatives to promote the role of information technology in improving public services. The first 'second generation' computer was established in 1964 at the University of Dhaka. During the post-independence period, large financial institutions, industrial corporations, Gas and Electric companies started using the computer at the business level for service delivery. Bangladesh faced a massive financial crisis after 1971, and many ICT concerned associations were established to promote the ICT sector. In 1979, Bangladesh Computer Council was established, which eventually contributed to the journey of the National Computer Committee constituted by the Bangladesh Government in 1983 (Hasan, 2003).. In 1982, a computer center renamed later as the Department of Computer Science and Engineering was established at Bangladesh University of Engineering and Technology. Bengali writing software was a crucial innovation in 1987 to promote ICT at the common user level in Bangladesh. Subsequently, the significance of using computers in day-to-day business has been on a steep rise. The launching of internet service in 1995 was a revolutionary step towards developing exportable software and multimedia system. BASIS was established in 1997, promoting the ICT sector through capacity building,

consciousness-raising, educating fresh graduates, and myriad career-oriented programs for employees (Sakil, 2018). The digital entrance of Bangladesh traces its origin back to the 1990s. The Government of Bangladesh perceived the importance of ICT and announced ICT as a 'thrust sector in 1997.

In that way, investment in the ICT sector brought massive innovations in the technical and organizational atmosphere (Alam and Ahmed, 2008). In Bangladesh, full-fledged ICT operation has consumed considerable time compared to other South and South-East Asia countries. The Government passed its IT policy in 2001, emphasizing all the sectors for digital inclusion. Unfortunately, the journey of ICT in Bangladesh has started later than in the countries of South-East Asia. Ministry of Finance developed an MIS system for budget planning, financial projections, impact analysis. With the funding available from the UNDP, the Government of Bangladesh made online accessibility of all government forms. In 2002, the Ministry of Religious Affairs, the Government of Bangladesh, commenced the Hajj Website to service ten and thousands of pilgrims (Choudhury, Kala, Sarwan and Kumar, 2010).

The National ICT Policy of 2002 generally emphasizes different aspects of e-governance. The Government of Bangladesh intends to use ICT systems within the public administration to improve efficiency, reduce hassles in service, improve planning, and enhance the quality of services delivered (Hoque 2005). In 2003, the Government launched a 'Support to ICT Task Force (SICT) Program' with the mandate of providing administrative and secretarial support to the ICT Task Force in realizing various ICT projects (Sobhan et al. 2004). The Government states to implement ICT systems to provide nationwide coverage and access by any citizen to the government database and administrative systems, which can extend public services to the remotest corner., A task force has been formed to understand the ICT policy (Khan 2004). Bangladesh has achieved exemplary success among developing countries in economic and social advancement and reduced extreme poverty and thus made an inspiring achievement in key human development indicators (UNDP 2019) and ameliorating many social development indicators. The country has managed very well to make progress in governance indicators in the last ten years consecutively. But global governance indicators suggest that smooth and flexible accessibility of governance has remained a significant priority for the complete understanding of development aspirations (Mahmud et al. 2013; World Bank, 2013 and 2018). According to the

election manifestos, the Awami League-led Bangladesh government has launched a long-term development strategy, termed Vision 2021, and it visualizes a 'Digital Bangladesh'. The manifesto did identify five priority issues for the country's development: (i) proper action against corruption, (ii) adoption of a comprehensive policy on electricity and energy, (iii) eradication of poverty and inequality, (iv) assurance of good governance, and (v) ensuring economic stability and control over price hike of essentials. Since January 2009, all policies and programs are being developed in line with the development strategy framework articulated in Vision 2021 (Bhuiyan, 2011).

Table 1.1 Status of E-Governance in Bangladesh. Developed by the author, and data have collected from the report

Country Name	EGDI	EGDI Level	2018
1. Singapore	0.8812	Very High	7
2. Sri-Lanka	0.5751	High	94
3. India	0.5669	High	96
4. Maldives	0.5615	High	97
5. Bangladesh	0.4763	Middle	115
6. Nepal	0.4748	Middle	117
7. Bhutan	0.4274	Middle	126
8. Pakistan	0.3566	Middle	148
9. Myanmar	0.3328	Middle	157
10. Afghanistan	0.2585	Middle	177

Source: Designed by author based on UN e-Governance report 2019

"For establishing e-governance, the Bangladesh government has improvised particular strengths and capacities. The Government can achieve their desired goals through the proper use of those

attributes.(Rahman, 2019, pp.4). "E-government is no longer a matter of choice for Bangladesh or other countries desirous of improving governance standards. The key policy considerations are not necessarily centered on technology but rather on political resolution. In Bangladesh and other countries in Asia, E-government has brought important transformations in how governments operate and provide services to citizens and businesses" (Sobhan et al., 2004, pp.10). "Since the

national election of 2009, the term 'Digital Bangladesh' has become more popular in the nation" (Asaduzzaman et al. 2011, pp. 46). Though Bangladesh is on the verge of transforming into a technologically efficient country, there is still room for improvement in technological advancement. A primary example of this digital development of Bangladesh can be comprehended through the increasing number of internet users. Currently, Bangladesh exports 1 billion worth of information and communication technology products in 35 countries, exceeding 5 billion dollars by 2021 (Palak, 2019). At present, the Government of Bangladesh has taken different initiatives to provide e-services at the grassroots level, especially at the union level, because about 70% of the population lives in Bangladesh (Shamrat and Hossain 2018). The utmost vision of e-governance at the union level includes some pillars: a) developing human resources ready for the 21st-century, b) connecting citizens in meaningful ways c) taking services to citizen's doorsteps. The life and livelihood of a large number of populations, who live at the grass-root level, cannot be developed without utilizing the ICT for them (Das 2019). The use of ICT can help significantly in improving service delivery, decentralization, transparency, accountability, and effectiveness and efficiency in the Government management process. It can also enhance democracy by ensuring citizen's participation in the governance system (OJO 2014). For providing services at people's doorsteps, the Government of the Peoples Republic of Bangladesh has introduced the Union Information and Services Center (UISC), later known as UDCs, a one-stop ICT service outlet located at Union Parishads level, which is the lowest tier of the Local Government (Saleheen 2015). Similar to the 'Tele-center' concept by different private organizations, the UISC model is unique because it is built on the concept of Public-Private Partnership (PPP) instead of donation dependent models and brings government services. A total of 4,501 UISCs were established at all Union Parishads, inaugurated simultaneously on 11th November 2010 to translate the dream of 'Digital Bangladesh' into reality (Hoque and Sorwar 2015). UISCs have been established to develop the UPs as reliable, dependable and resourceful

centers having connectivity within the global, national, and local networks. In addition, these service centers have some targets, including ensuring easy access of common people to governmental, commercial and social information and services. It is also creating ICT infrastructure at all Union Parishads and increasing the efficiency of union parishads through prompt delivery of data and continuation of day to day services; providing a supportive environment for the creation of local entrepreneurs; ensuring the free flow of information for empowering the rural community and creating a vibrant, knowledge-based union Parishad (Shahnewaz et al. 2015). The overall situation of the local area can be developed through the proper implementation of the services taken by the Union Digital Center (UDC). No empirical study has been made to assess the effectiveness of UDCs' service. So, it is very rational to make a research study to evaluate the e-service delivery status of UDCs at Union Parishad in Bangladesh.

1.2 Statement of the Problem

Bangladesh has been facing enormous challenges from different aspects like political, social, economic, and technological in providing e-services. The Government has gained some unsatisfactory progress through initiating some sporadic programs. Following the trails of all the other countries, Bangladesh has emphasized the development of local area through implementing various programs and projects. But the condition of the local level of people is still now unsatisfactory. The tier of local government can be more independent, strengthen, more efficient, and effective through introducing e-services. The inauguration of UDCs in the local area is an excellent initiative to provide e-services to the door of the local people. UDCs generally offer three kinds of services- commercial services, government services, and information services (agriculture, industry, commerce, health, education, health, law, Human rights, environment, etc.). UDCs aims at promoting e-service delivery at the local level. Most of the rural people are not literate. So, they cannot easily access services by using the internet.

Similarly, local people do not have adequate financial resources to have internet access. To build a digital Bangladesh, the Government needs to distribute the wave of digitalization in urban and rural areas. The ICT sector has two significant contributions at two levels: one is direct, and the other one is indirect. This sector can directly contribute to domestic employment, GDP growth and facilitating smooth functioning with international trade. Besides, ICTs have a crucial

indirect effect in improving accountability, transparency, efficiency, and effectiveness in service delivery (CPD 2006). UDC is such a strong institution to deliver hassle-free service to promote ICT-based services, ultimately reducing cost, time, and hassle in service delivery. However, UDCs does not have any specific policy guidelines. The Government has promulgated UDC Circular to run the UDC, which discusses the entrepreneurs' functions, roles, and responsibilities. The UDC Circular has also outlined the part of Union Parishad to cooperate with UDCs. But there has not been any established framework to describe the recruitment policy, qualifications of UDC entrepreneurs, monitoring process, and accountability mechanism. Even the infrastructural, human resource and managerial capacity of these service centers are fragile to ensure efficient e-service at the local level. So, the influential role of the e-service center at the local level is imperative to promote e-service delivery. As a result, the study has focused on the effectiveness of e-service delivery of Union Digital Centers at different Union Parishads in Bangladesh.

1.3 Review of Related Literature

Governance is a mechanism through which citizens can articulate their needs and exercise their legal power. Government encompasses the state, which incorporates all organizations be it public or private (Heywood, 1997; Almqvist et al. 2013; CIPFA, 2013; UN 2015). Modern technology is making a new aspiration among the country's citizens that people can avail themselves of public service conveniently and simultaneously public servants are capable enough to provide different government services very efficiently through using technology (Howard 1995; UN 2008; Salam and Islam 2015, Messerli et al. 2019). E-governance can easily promote administrative capacity, accountability, and transparency. Governance narrowly includes strategic decisions to deliver services to citizens. Governance is the art of managing resources for keeping politics and economics under control. In a word, e-governance can deal with the inherited pathology of bureaucracy and politics (Morshidi and Abd Hamid 2010; Singh 2013; Rahman 2015; Shadik 2017). Kalsi et al. (2009) described how the wave of electronic governance had transformed the traditional models of governance. The paper also emphasizes good governance and e-government initiatives of Government, which directly impact citizens.

Carter & Belanger (2004) studied on various Government services and information that are provided to citizens, employees, businesses, and government agencies through using information technology to enable and expand the efficiency of government activities., An introductory model has been adopted to analyze the e-government initiative. The study finds that an initial model is

essential, about 50 per cent of the variance in citizen-centric various e-government initiatives. Besides, there are three significant criteria to perceive citizens' intention to use government service at the state level in the online environment. The requirements include perceived relative advantage, perceived image, and perceived compatibility. Thus, the Government can easily ensure better services for citizens' welfare, which will ultimately help change citizens' lifestyles.

Mishra (2014), Chukwuemeka et al. (2017) and Wang et al. (2016) examined significant role of e-governance in mobilizing the service delivery process, enhancing accountability, improving efficiency, and reducing wastage of time, delays, and workers' mistakes to carry out the responsibilities. The study finds that e-governance can assist in attaining organizational goals and targets through quickening service delivery to citizens, employees, businesses, and so on. Technological changes also help open the doors of globalization, especially in developing countries like India, which has benefited from using information technology in urban and rural areas. The governmental functions and the way of working are becoming more transparent and accessible among the mass people in the metropolitan and local area through rapid use of proper information technology. As a result, the traditional public administration has to adopt the new trends in advanced technology to cope up with the globalized world.

Gunter (2006), Alshehri & Drew (2010) describe that E-governance can ensure to improve government efficiency by providing door to door service delivery to the citizen, which contributes to enhancing the citizens' satisfaction. The UK government, one of the most democratic, advanced and highly developed countries globally, has focused on using information and communication technology to ensure better service delivery for the citizens through publicizing adequate information. As a result, the Government of the UK has emphasized specific strategies to promote e-innovations in case of service delivery through the development of e-learning platforms, the use of technology for government services, the inclusion of marginalized under the wave of digitalization, and the use of ICT in business-related activities.

Nijkamp and Cohen-Blankshtain (2013), Ardovino (2015) and Piracha & Kumar (2017) mention that Information and Communication Technology has a significant influence on mitigating challenges in urban service delivery through Information Communication and Technology for modern cities. Usage of ICT with the engagement of local communities and citizens ensures the effectiveness of service response, easy use of technologies, and inclusiveness of programs.

Besides, better knowledge management in terms of ICT is an essential factor to foster urban service with the help of technologies. Public, private partnership projects are needed to be promoted due to the persistent scarcity of resources and to enhance the efficiency of local IT workers. The government must mobilize through massive investment in networking among the cities and local authorities instantaneously.

Raposo et al. (2006) describes that the political and economic situation of the countries has been changing with the changing circumstances at the global level. Against this backdrop, one of the core activities of the Government is to ensure the maximum utilization of taxpayer money used in different programs and projects that are ruining under the ruling political party. There is no chance to neglect government intervention in various ongoing projects because of how the power is exercised. Traditionally, it is not very easy to make the Government accountable. However, the effectiveness of the Government is measured through its relationship with the citizens. But it neglects the essential aspect or function of the Government. For example, government activities are supposed to be more transparent, more accountable, responsible, well-disciplined, and ensure equality by reducing inequalities. The study finds that those issues can be solved through different dimensions like adoption and coordination of public politics, participatory democracy, the constitution of cooperative networks, and last but not least, access to clear information. It will help to ensure and resort to democracy in the country. This study recommends that the e-government model be included within the curriculum of the higher education institutes. Internal (G2G) and external relations (G2B and G2C) are needed to be integrated with the institutional framework of higher education institutes. This process will help enhance performance, quality of services, and tertiary-level education efficiency.

Verma and Kumari (2010) examined the quality of public service delivery. The enhancement of public service quality will not automatically have an impact. Instead, a good service entirely relies on the public service orientation as well through e-government. The service delivery function is fastening, widening, and speeding due to e-governance in the panchayat bodies. As a result, e-panchayats are now reasonably able-bodied to provide computerized birth, death and domicile certificates, trade licenses, and so on. The three themes (accountability, trust, and public health) are emerging on the e-democracy agenda. In developing countries, establishing accountability and transparency of the Government is the main focus of e-government. There are

three key indicators to measure e-public services: availability online between citizens and enterprises. These several individuals use the internet for communication with the public offices by the level of sophistication and the number of enterprises who use the internet with the general office by the level of complexity (Mekovec and Kelemen, 2012).

Paul & Paul (2011) and Kalsi & Kiran (2009) describes that E-governance is a crucial tool to transform the governance system and improve the overall quality of services provided by the respective Government. There are some challenges in technical, economic, and social perspectives in resilient economies. So, a strategy is essential, including maintaining the relationship and application of information, knowledge, and information and communication technologies. Another important thing is the formulation of a cyber-security policy that will articulate secured transactions in service delivery. To attain the fourth stage of e-governance, building up a system where citizens can easily interact with the Government from a single point and transact with trust is essential. At the same time, government agencies must protect aloof from delays in service, a long queue of service receivers, complexity in the service delivery process, the transaction of illegal money, etc. The study recommends that the potentialities of Information and Communication Technology are essential for ensuring good governance. But there are some problems, including inadequate staffing, unfitting donors, etc. These are to be addressed with significant attention.

de Ruyter et al. (2001), Ancarani (2005) and Sufianti (2007) examined the potential benefits of e-service include ease of access to information, contact with specific representatives, greater accessibility to services, and cost-reducing and efficiencies and effectiveness in services provision are the potential advantage of E-service but apparently, the culture of the public institution will not change automatically to implement the e-service. The citizens' satisfaction has a strong correlation with the e-service quality. Besides, service quality strongly depends on the web of assistance, efficiency, and responsiveness. Three conditions are considered hypothetically, including the relation of e-service quality with citizen satisfaction and the connection of e-service quality with the user and actual usage with citizen satisfaction (Saha et al., 2010).

Kalsi et al. (2009), Rajib and Hoque (2017) describe that Information and Communication Technologies (ICTs) can easily ensure good governance through Participatory Stakeholder

Assessment (PSA). The study emphasized a causal relationship between conditions for good management and a suitable environment for the proper implementation of e-governance. Besides, this paper attempts to identify challenges, cultural aspects, and so on relating to e-governance. Bureaucracy is characterized by a series of disfunction in the form of limited willingness to service delivery. However, public organizations have an eagerness to improve their efficiency and service quality to their citizens. Governments worldwide have initiated using the potentials of technology to ensure online service delivery and access to better information. So, governments need to shift in the systematic process of forming new technologies that will provide better public service for citizens in-home settings. In doing so, governments have to face significant challenges to render public service using new technology to enhance financial capability (Sarker 2006; Sing 2010 and Pepinsky et al. 2017). Due to the criticisms of the conventional licensing system by the applicants and the citizens, e-licensing has been a crying need to improve the performance of public employees. From the context of Taiwan, which is a modern and technologically advanced country, an empirical example of digital governance, the digital divide in Local Government gives a result that can be a guiding framework for government agencies. The Government of Taiwan has focused on 42 measures and five dimensions, including human resources, ICT infrastructure development, access to information, internal factors of the organization, and external environments. The study finds that the digital readiness of Chiayi county's local government is extreme. Users have to access information, including filing e-reports and complaints and receiving available information from web resources. But, the number of e-service users is not high in the Chiayi government (Chang et al., 2012; Mishra and Mishra 2012; UNCTAD 2019).

Sharma and Kalra (2017) finds that E-governance has prolific implications in smart cities. It is the more innovative way of ensuring the development of overall administration. Citizens at the urban level can get innovative services electronically. Due to e-service, citizens are entitled to get benefits anywhere at any time. So, the Government must ensure proper channels for maintaining relations between the citizens and authorities using the internet. Besides, the security of the service information is essential, which requires serious attention. The study proposed applications of e-governance in smart cities through crucial agreement protocol, smart card access having a strong password, authentication of Government and citizens, maintaining the anonymity of the user, security verification, etc. This model helps ensure security and keep the

system free from threats. Through e-governance, citizens of our country are getting various services very quickly at the urban and rural levels. One-stop service centers are facilitating government services that are very difficult to receive physically. The government website is a significant node for information dissemination by the Government. Citizens can easily access and go through various information, reports, news, and a bulletin. Past, the ICT task force was initially formed in 2001 to introduce e-governance in Bangladesh. The effort was not successful because the Government had not taken serious steps to implement the strategies efficaciously. Nowadays, the Government is taking a series of priority-based projects for ensuring e-governance in Bangladesh. The various pilot-based program has been taken to examine the effectiveness of the programs and projects with the support of ICT task force implemented by the Ministry of Planning (Basu 2004; infoDev/World Bank, 2009; UN 2010; Faroqi and Siddiquee 2011; Alam 2012; ICT Division 2019).

Bokad et al. (2013) examined e-services of various provinces of India. In Andhra Pradesh, the Government established e-Seva centers in over 200 villages under the e-village project, e-village websites and databases having land record management, patted passbook, ration card system, and so on. Gujarat State applied a one-day governance model to ensure eight services within 1 hour. Karnataka State is now offering 800 citizen service centers. West Bengal government offered 6,697 Citizen Service Centers to provide various services started in the education sector. The Haryana government online-off campus counselling in 2007-08, especially for the technical courses for diploma, graduate, and post-graduation. Kerala government initiated a one-point solution to provide 25 types of ~~cities~~ ^{services}. Tamil Nadu has placed second in internet and broadband subscribers throughout India (Department of Administrative Reforms and Public Grievances n.d.).

Alam and Hassan (2011) describe that e-governance is an emotional issue to ensure development in the administration of developing countries, Bangladesh has to face various challenges to get an advantage from the wave of e-governance. Our country has to overcome multiple constraints in the administration, including infrastructural development, technical capability, technical efficiency, ICT knowledge, economic and financial resources, to get a positive outcome from e-governance initiatives. In addition, the participation of all levels of stakeholders is highly imperative to overcome various challenges faced by the Government. At the same time, the Government needs to bring change in policy-making, inclusive, diversified, and perspective. In a

word, the capacity of the Government is essential to ensure good governance (World Bank 2000, Tahrima and Jaegal 2012; Hassan 2013; Sharmin and Samiul 2013).

Jamil and Dhakal (2013) describes those developing countries like Nepal have also prepared an e-policy to promote e-government to deliver service efficiently. To achieve the target of MDGs in economic development and poverty reduction, ICT played a pivotal role. Nepal has launched telecenters for community people so that local people can get the benefits of mainstream development. Nepal government fulfilled core objectives by ensuring ICT based public service delivery processes in public offices. Even e-governance helped bridge between public sector organizations and community people resulting in inclusiveness in the decision-making process. There is a relationship between e-governance and service quality in Papua New Guinea (PNG) and Fiji, focusing on improving the service delivery process. The citizens have high expectations of receiving public services from the Government, but it was found negative that citizens are not well adequately known regarding the quality of services in PNG and Fiji. Apart from that, e-governance has potentialities in the context of the two countries. So, the more the improvement of e-governance, the lesser chance of bureaucratic hassle, delay in service, and reduction of the number of visits of citizens (Naz 2009; Pathak et al. 2010; Singh et al. 2011, UNESCAP 2016, Ministry of Economy 2017).

Contenti et al. (2003) explains that electronic service delivery is a matter of carrying out through coordinated efforts of various public authorities. Albeit e-service delivery is a cooperative process, it is highly based on technologies that enable a country's infrastructure. The action was given to construct the EU-PUBLI.com project operationalized in the lands belonging to European Union. For ensuring e-government, practical, social and economic context-related activities have to be focused predominantly while the success of e-service initiatives depends on the availability of ICT facilities that enable e-service more effective. In India, most of the e-governance projects are contributing to fulfilling citizens' needs. So, a holistic approach is essential for ensuring self-sustainable development because citizens are prepared. But there is a challenge which is the attitudinal change among the citizens. (Asgarkhani 2005; Grönlund et al. 2005). The expansion and action of E-service require a high degree of co-operation and cross-agency working, whereas a one-stop service also means reducing the necessity to switch between different media when interacting with the public administration to ensure general satisfaction (Aichholzer 1998; OECD 2003; Fountain 2013; Kramer 2018; Scholta et al. 2019).

Alam (2014) mentions that Bangladesh's government has taken various initiatives to digitalize the services. In doing so, initiatives have been started from very local areas like the Union Parishad level. If rural people are excluded from the wave of digitalization and modern technology, it will be difficult to ensure comprehensive and sustainable development in all aspects. As a result, the local Government is an integral part of the country to ensure social-cultural, political and economic development (JICA 2015, Hoque and Sorwar 2015 and Faroqi 2016). The local Government has various institutions that operate at the local level for better service delivery among the community people. Vision 2021 articulates how to ensure development and digitalization throughout the country by decentralizing political and bureaucratic power. Union Information and Service Center (UISC) was established to expedite service delivery at the rural level in 2010 to fulfil government initiatives. After that, the UISC was transformed into Union Digital Centers (UDCs) to make the service faster where entrepreneurs are responsible for assisting rural citizens. Thus, the service delivery process is becoming accessible, cost-effective, and flexible (Habib and Akhand 2017; Das 2019; Aziz 2020; Faroqi and Collings 2020). The Bangladesh government has already adopted an ICT policy to implement e-Government. E-Government applications will help ensure good governance and public satisfaction (GoB,2002 Bhatnagar 2003; Hasan 2015). Despite low income and not a high literacy rate, Bangladesh has accomplished significant progress in access to Information and Communication Technology (ICT) arrangements (Hasan, 2003; Alam 2007; Sanou 2011; ERD 2020). The country needs E-Governance for proving quality government service at the doorstep of citizens, to ameliorate people's participation in deciding to make solving people's problems and making Government more accountable to citizens of the country so that Government can reduce time, visit and cost (TVC) (Rahman, 2019).

Sobhan (2010) & Billah (2015) describes that UDCs in Bangladesh are project initiatives taken by the Local Government Department of the Ministry of Local Government of the people's republic of Bangladesh and Access 2 Information (A2I). The UDCs are getting monitored by the District and Upazila administration simultaneously. The UDCs are known earlier as Union Information and Service Center. It was inaugurated on 11 November 2010 by the Honorable Prime Minister of Bangladesh, Sheikh Hasina, and Executive of United Nations Development Program (UNDP), Miss Helen Clark, through a video conference. However, UDCs at the Union level have been established to promote local service delivery and play a vital role in achieving

the target of digital Bangladesh by 2021. The UDCs are helping to eliminate technological disparity, high cost of service, and so on (UNDP 2010, Mahiuddin and Hoque 2013).

Uddin (2017) &Faruqi et al. (2019) find that due to the settlement of UDCs, local people are getting around sixty kinds of public and private service quickly and effortlessly. About 4.5 million people are getting various information related services from union digital centers. The services generally include citizen certificates, passport, visa-related information, government forms, notice, law-related information, job news, results of various public examinations, health counselling, mobile banking facility, agent banking facility, computer training opportunity, land settlement, repayment of electricity bill, online admission for the public and private universities, online birth and death registration, VGF and VGD list, agriculture-related information, video conferencing, printing, scanning photocopies laminating, photos, internet browsing, email, British council English learning, application for visas, and so on. Bangladesh has a lot of challenges to implement the e-governance system. The implementation of digitalization is a herculean task that can exceed the timeline of vision 2021 of the current Government. Besides, various factors include lack of IT literacy and knowledge, access to internet opportunities for all, language barriers, and limited awareness among the local people that can impede the successful implementation of e-governance (Weerakkody et al. 2009, CRI 2017, UNESCAP 2018).

The governance of Bangladesh has already been perplexed with the growing corruption in various sectors, the level of inefficiencies in bureaucracy, severe politicization in administration, the inexistence of the rule of law to ensure justice. Corruption and inefficiency are considered as main hindrances of the economic and social development of Bangladesh. At the same time, ICTs can prevent corruption and encourage growth by promoting good governance, increasing reform-oriented initiatives, reducing the potential for corrupt behaviours, strengthening relationships between government employees and citizens, allowing for citizen tracking of activities, and by monitoring and controlling behaviours of government employees (Jamil 2002, Khan 2003 and Mollah 2003). Introducing an electronic governance system can be a suitable mechanism to eradicate rampant corruption, ensure administrative accountability, people participation, ensure equity and equality, efficiency and effectiveness (Shim and Eom, 2008; Khan and Islam 2014).

Knowledge Gap:

Most of the paper discussed the nature of the e-service, status of the e-service, scope, and dimension of the e-service in the Central and Local Government. Some papers emphasized massive investment in technology in the rural local government institutions, which is a daydream for the developing country. For example, In the context of Taiwan, one of the fastest economic growth and highly technologically equipped country-focused 42 measures and five dimensions including human resource, ICT infrastructure development, access to information, internal factors of the organization, and external environments, which is quite expensive for the developing countries like Bangladesh. It also required not only a well-educated society but a technologically educated one. In India, state governments had attention to establish various e-service centers for ensuring better service delivery. Even the Government took some projects to provide better services to beneficiaries. A one-point solution center was established to provide various certificates quickly. In the UK, the country emphasized e-learning to introduce the people to develop a digital society. Still, most papers do not discuss how providing e-service methods can be made more accessible and more flexible in rural areas where most people are illiterate, economically poor in condition. As a result, the status of essential public service is frequently worsening in developing countries like Bangladesh. Bangladesh's Government has a scarcity of resources, lack of availability of financial resources, and absence of massive infrastructural support. Even the local government institutions are not strong enough to run themselves independently. Almost all local government institutions are solely dependent on the central Government's allocation yearly, and this allocation is insufficient for the local government institution. Lack of human resources is one of the significant challenges to ensure public service at the rural level. The Government is not able to recruit more human resources for the local government institution. As a result, the Government had to find a mechanism to ensure public service delivery in the local level area using existing capacity without recruiting any new personnel. As a result, the Government had to think alternatively. UDC is one of the significant innovations to support rural citizens by outsourcing and engaging private entrepreneurs to allocate a small amount of money for buying some accessories like a computer, printer, internet connection, ups, and photocopier, etc. This one-time investment reduces government transaction costs, quickening service delivery, and helping rural pro-poor, uneducated, older adults who could not get services quickly. One of the excellent examples of UDC service is getting a mark sheet used to take a long time and physically collect from the school. But now, it is very easy to

collect it from UDC at a minimum cost. It is high time for the Bangladeshi Government to break away from traditional service delivery. While the Government is encouraging our citizens to be involved with technology, unfortunately, technological education, technology, training, and human resources are actively demotivating citizens to fulfil their demands. But the big challenge is these changes can't happen overnight in developing countries, especially in Bangladesh, where social and economic conditions are not up to the mark because the technological sector is persistently underfunded and undervalued. The literature does not guarantee that electronic service is a fundamental mechanism to ensure quality services everywhere. The e-service concept is a technical one, and it is not easy for all to perceive. Besides, electronic service delivery is a complex process to replicate in the government authorities for delivering services. So, it cannot be predicted that e-service can easily be duplicated in service delivery at the local level. It is a matter of debate and research whether UDC in Bangladesh can deliver all services from a particular node. In that case, this study will focus on the existing challenges and limitations and describe some valuable suggestions for Government.

1.4 Research questions

This study intends to find out the answer to the question “to what extent UDCs are effective in case of e-service delivery in the context of Bangladesh.”

Besides, there are some questions relevant to the objectives of this research. The questions are:

1. To what extent the policy and legal framework of Union Digital Center are effective?
2. To what extent the present structure and management system of UDCs is effective in providing e-services?
3. To what extent do the UDCs have the infrastructural and logistic support to provide services?
4. What is the nature of service delivery provided by Union Digital Centers and its impact on service recipients?

1.5 Objectives of the study

The broad objective of this study is to examine *‘the effectiveness of e-services delivery in Local Government: A Study on Union Digital Centers in Bangladesh’*, which comprises the following specific objectives:

1. To examine existing policy and legal framework of union digital center.
2. To examine the present structure and management system of UDCs in case of providing e-services.
3. To examine the institutional capability of UDCs, including infrastructural and logistic support such as; electricity, telephone, internet-based computer, etc. and human resource capacity in these service centers.
4. To assess the nature of service delivery provided by Union Digital Centers and its impact on service recipients.

1.6 Justification/Significance of the Study

For ensuring government services delivery, One-stop service shops have already become a general and flexible approach for delivering government services of various types worldwide. This approach makes life easier for citizens, but the efficiency of service provision has been increased by providing economically. The one-stop-shop model rolled out to ensure that service delivery is the same in all corners of a different region globally in America, Europe, Latin America, Asia, and Africa and across various service areas. Multiple governments worldwide are consecutively expanding other windows to ensure public service among the people round the clock. The Government is eventually expecting to cover the entire public sector, including immigration, agriculture, employment, welfare benefits, education-related service, health service, agriculture, financial service, and so on. These services are being managed through a one-stop-shop mechanism. Bangladesh is not different in terms of providing public service through a one-stop shop. Local people are getting various Government and business services through UDC under a one-stop center named Ek- Sheba platform (All service is one place), which is very popular among the local people under A2I. UDC a catalyst, service delivery mechanisms are being transformed, making essential public services offered to citizens in the least period, at a minimum cost, and in the minor visits effectively and efficiently. The Government of Bangladesh has already established 5730 digital centers within 4 kilometres from the village to

ensure better service among the rural people, including women, older people with disabilities, illiterates, unskilled and socially deprived people, through a one-stop digital named Union Digital center. UDC has been run under the collaboration with Government and 6934 young, energetic male and female entrepreneurs serving free and paid service using modern communication technology. This innovation creates around 7000 entrepreneurs working to help the Government and ensure public service in a remote area. Union Digital Center (UDC) is a newly established institution compares to other institutions in providing e-services in the local area in Bangladesh.

No empirical research study has occurred at this service center. Organizational and managerial programs of UDCs are helpful for professional bodies. The output of the study has been used as reading material for academic institutions. There is an entrepreneur in every service center to run the functions of these UDCs. This study has contended that the present structure and management system of UDCs is effective in providing e-services and capacity of UDC in-term of infrastructural and logistic support and current states of UDC. Last but not least, the study has attempted to find out the problems and prospects of e-governance in Bangladesh, especially in rural areas. No such empirical and higher-level study has been conducted on this area which creates a rationale for undertaking this research.

1.7 Scope and Limitation of the Study

This study aims at finding out the services of e-governance at the grassroots level, especially at the union level in Bangladesh, by analyzing various issues relating to e-governance. It has focused on the institutional capability of Union Digital Center (UDC) and the e-services provided by these centers for the people of the local level. UDC offers numerous services for citizens. The study has considered Online Birth and Death Registration, Public Examination results, Citizenship certificate, Land registration certificate, Computer training, Internet browsing, E-mail, Printing, Scanning, Compose, Photocopy, Laminating, Data entry, Application form fill-up for Passport, Information related to education and agriculture. Doing research is an outburst activity; in this point of view, the researcher may face some problems to conduct this research. Since this study has occurred by a researcher, time limitation may be found for some unavoidable circumstances. A sufficient budget is necessary to do such a type of study. But financial support may not be available. The respondents may have not adequate knowledge of e-Governance as most of the respondents are people of rural areas with limited knowledge.

1.8 Organization of the report

Since this kind of endeavor has been taken to get complete detail, this work has given a very inclusive result regarding e-service at the local level. As a result, this has made the paper descriptive, and the research paper is divided into seven chapters. The introductory chapter has included the background of the study, problem statement, review of relevant literature, research questions, objectives, the rationale of the research, including the scope and limitations of the study. After reviewing the literature, the paper finds a knowledge gap between understanding where it is needed to intervene for the current study. Chapter two highlights the conceptual framework including governance, Government, development, e-governance and models of e-governance. Chapter three analyses research methodology, sampling, strategies applied for data collection and validation and organization. Chapter four discusses Union Digital centers in various countries, likely Denmark, Norway, Georgia, Brazil, Tajikistan, Vietnam, Laos, China, Mongolia, Myanmar, Bhutan, Sri Lanka, Pakistan, India, and Bangladesh. Chapter five discusses the institutional arrangement of ICT and ICT policy of Bangladesh. Chapter six analyses the existing structure and management system of UDCs in case of providing e-services. It explores the institutional capability of UDCs in Bangladesh. It further analyses the nature of service delivery by Union Digital Centers and the potentials and challenges of e-services provided by UDCs in Bangladesh.

Chapter seven discusses the conclusion and recommendation of the study.

Chapter Two: Conceptual Framework

This chapter discusses governance, good governance, e-governance, public service and e-service. Until recently, all of the state actors are working to improve public service, make it easier and faster and more efficient, responsive, and accessible to the citizen through the application of information and communications technology (ICT). This chapter has organized various concepts, including governance, good governance, e-governance models and e-service models. The governance model has been explained with the arguments of multiple scholars. It also includes an explanation of various organizations like OECD, UNDP and World Bank regarding governance. Subsequently, good governance has been analyzed along with describing how ICT is helping to promote good governance. The e-governance models include some prominent models like Layne and Lee Model, Andersen and Henriksen model of e-governance, World Bank Model of e-governance, Moon model of e-governance and United Nations Model of e-governance. Finally, the e-service models include the Modified Quantitative Service Delivery Model, E-service Integration Model, One Stop Shared Model, Broadcasting Model, Comparative Analysis Model, Critical Flow Model, Interactive Service Model, E-Advocacy / Mobilization and Lobbying Model.

2.1 ICT and Governance

Governance and Government are used interchangeably in different phrasebooks (Rhodes 1996; Al-Habil 2011). The Government is a legitimate entity that can exercise power and authority over the people to meet social needs through dynamic leadership (Fasenfest 2010). Today, developing countries face multifaceted challenges in governance to promote development in different aspects, including poor service delivery, bribery, corruption, scarcity of resources, etc. (Goran and Julius, 2002; World Bank 2017). Governance, a widely used term to a state, has become an issue of concern to political and nonprofit actors. The term governance incorporates new ways of thinking on social coordination and patterns of rule as appeared in civil society (Armstrong et al. 2010:129, Bevir 2008). The epistemology of governance probably originated from the Greek *kybernan*, meaning to pilot, steer, or direct, which was translated into Latin as *gubernare* (Levi-Faur,2012). Governance is usually defined as how the political leaders exercise power to manage country's economic and social resources for ensuring development for the well-being while efficiency, effectiveness, and economy are the fundamental aspects of

administration governance in a public or private institution (Pani and Mishra, 2009: World Bank, 1992:1). It predominantly talks about Government, and one of the main tasks of governance is policy formulation and implementation to ensure human, social, political, and economic development. At the same time, good governance is the significant element of the capacity to attain sustainable development in terms of social and economic aspects, which has been mounting consciousness in the last few decades worldwide (Badjun 2004: 133). In recent times, governance has been the center point to accelerate institutional excellence, mobilize human capacity, and deliver public services within a competitive environment (OECD 2009). Governance pertains to the exercise of economic, political, judicial, and administrative authority to manage all resources available to society, including the formation and implementation of rules that govern interrelations to attain developmental goals. (UNDP,2006). According to the Asian development bank – governance is the useful exercise of political, economic, and administrative authority to manage a country's resources for development. It involves the institutionalization of a system through citizen, institution, organization, and groups in a society which articulate their interest, exercise their rights and mediate their difference in the pursuit of the collective goods (ADB 2013, p.01). So, it is a process whereby societies or organizations make their important decisions, determine who has a voice, engage in the process and how the account is rendered (Edgar et al. 2006). In a word, governance is the functional and structured extension of Government. Concerning the Government or the public sector, it refers to the institutional underpinnings of public authority and decision making. In this way, governance incorporates the systems, institutions, and other actors and factors that determine how political and economic communications are structured and how decisions are made and resources allocated (Grindle, 2010).

2.2 ICT and Good Governance

Good governance covers a positive feature of political systems, and contrarily, lousy governance is the root of all issues that organizations and countries need to solve. Good governance most generally refers to a list of praiseworthy and laudable characteristics of how Government should be carried out (Grindle, 2010). According to the United Nations Economic and Social Commission for Asia and the Pacific (<https://www.unescap.org/>), good governance has eight

significant characteristics. It is transparent, participatory, consensus-oriented, accountable, effective and efficient, equitable and inclusive, responsive, and follows the rule of law.

ICTs help governments and other actors to adopt new approaches in creating transparency and ensuring development. However, ICT-enabled initiatives must shift from increasing information access to ensuring rules are transparent and applied to build capacities to monitor the decisions and actions of the Government (Bhatnagar, 2003). Many countries use ICTs to promote transparency, efficiency, and effectiveness at the same time (von Waldenberg, 2004). For instance, in India, keeping updated rural property records online has improved accessibility while removing options for local officials to take bribes (Bhatnagar, 2003). In Pakistan, the whole tax system and structure has been reformed to remove direct contact between tax officials and people to reduce opportunities for asking bribes (Anderson, 2009). The Government of Bangladesh has developed an online tax payment system to stop hassles and corruption, which eventually encourages taxpayers to pay their taxes. Furthermore, the Bangladesh government has numerous official websites to provide the citizens with useful information. (For example, bangladesh.gov.bd, bangabhaban.gov.bd, pmo.gov.bd, cabinet.gov.bd, parliament.gov.bd, nothi.gov.bd, online.forms.gov.bd, a2i.gov.bd).

ICTs hold a good potentiality for and demonstrate benefits in anti-corruption, particularly by enhancing the effectiveness of internal and managerial control over corrupt behaviours and promoting government accountability and transparency (Shim and Eom, 2008). Citizen's Charter is a public document that gives crucial information about the services provided by the organization. People can quickly know what types of benefits and services they get from the agency. They can hold accountable for the agency if they cannot get them properly (Daily Start 2008). For instance, Amarmp.com is one of the mechanisms of public accountability, and it reduces the gap between members of parliament and citizens of their respective constituencies. Any citizen of certain constituencies can ask the MP and get replies using the AmarMP.com platform (<https://amarmp.com/page/1>).

Moreover, there are Facebook Pages of MPs and DC offices using which people can avail solutions to their queries and needs. Through ICT enabled services, the Government of Bangladesh can respond to any matter that was previously difficult and time-consuming. In some cases, the present Prime Minister Sheikh Hasina inaugurates programs or projects across the country utilizing video conferences while she is in the capital city. In recent, she has inaugurated

a newly built expressway through a video conference (Prothom Alo 2020). It has become easier to inform and get responses from law enforcement agencies through RAB and Police apps (e.g. BD Police Helpline, Dhaka Metropolitan Police: DMP, 999). These services can reduce violence against women (such as rape attempts) and make them safe. Posting videos and pictures or links as evidence and making them viral on social media help pressurize the authority to take the proper actions quickly (<https://dmp.gov.bd/victim-support/>).

The financial inclusion of people from every corner is significant. People in rural areas and even women can get access to financial matters smoothly (Chattopadhyay 2011). Bangladesh Post Office has recently introduced a dynamic, secured, and digital financial service named Nagad, which facilitates regular financial transaction needs like send money (P2P), cash in, cash out and mobile recharge, etc. Besides Nagad, there are several simple, easy-to-use, and innovative services in the market to meet general people's needs and demands (Daily Star 2019). BKash is one of the mobile financial services. Nowadays, people can pay their utility bills through mobile or e-banking.

Moreover, people living in rural areas can apply to educational institutions and get results without visiting physically. It saves valuable time and money. Rural people now can do business online and earn money through outsourcing. Women run many online shops. In some cases, these small businesses flourish into big entities through the successful business operation.

Furthermore, Village women are now involved in economic activities through mobile banking (Daily Star 2014). The Union Digital Centers (UDC) renders a wide range of services generally provided by the Government, the local Government, and private organizations. Services from the UDC include different types of certificates. As a one-stop delivery point, the UDC solves many problems and provides services to people's doorsteps since it is located in Union Parishads, a nearer place to them (Faroqi, 2015).

Several actors and interests' groups facilitate decision making to reach broad consensus with collaboration serving the best interest of the society (Session 1981). Good governance ensures the best protection of public interest in the community and finds out the achieving mechanism. From a long-term perspective, good government also needs to ensure sustainable human development (ESCAP 2006). Consensus-oriented also incorporates all actors who will support decisions regardless of their individual opinions. Consensus oriented also included public hearings, referendums, forums for debate, citizens' legal right to petition leaders about policy,

and consultation mechanisms that are examples of working towards achieving consensus (UNODC 2019). Good governance should mediate differing interests to reach a broad agreement on the group's best interests and, where possible, on policies and procedures.

Technology can ensure equity and include people from every corner of society. The Government provides education services in rural Bangladesh through ICT. The Government has already offered 'multimedia classrooms' and 'teacher-led content development' in 500 primary schools, 15,200 secondary schools, and 5,300 madrasahs (religious education institutions) through different Education and the Ministry of Education projects Primary and Mass Education. Anyone can download books from class one to class 9-10 from the website (www.ebook.gov.bd). Multimedia talking books is one of the excellent initiatives of the Government to ensure access to education for visually impaired people. Telemedicine services using computers and the internet has been started. Doctors, sitting at the cities' hospitals, give medical consultations to the patients of the remote areas using software like Skype (A2I 2013). Bangabandhu-1 has opened up new opportunities for connectivity to the country's rural areas. Using the Bangabandhu satellite, people living in the country's remotest areas will have access to the internet at an affordable price (Islam 2018). A toll-free national emergency helpline 999 has been launched for immediate needs in the case of an accident, crime, fire, and ambulance service. Law enforcement agencies can recover stolen vehicles that use GPS vehicle tracking systems. With the tracker in place, the police or owner of the car can locate and monitor the car by simply following the signal emitted by the system (Daily Star, 2017). Bangladesh Police has also started an online General Diary (GD) filing service to make the process easy and citizen-friendly. The Online service is minimal and provided under the Dhaka Metropolitan Police (Financial express 2017). National identification card (NID) has been digitalized with biometric registration, and it is now termed a smart card. The card contains the microchips that have all data of a citizen. Smart National ID card (Smart NID) holders get 22 types of services, including taxpayers' identification number, banking, driving license, and passport. It will be easier to verify any citizen of Bangladesh. It will be easier to catch criminals if the Government has the information (Prothom Alo 2016). CCTV cameras are generally installed for surveillance and monitoring purposes. A closed-circuit camera can help monitor government projects and other tasks. As it can see people's activities and movement 24-hour, criminals fear being caught red-

handed. These machines are widely used in financial institutions. The Bangladesh government has already received positive results (Financial Express 2019). Nowadays, getting a passport has become speedy and straightforward in Bangladesh because of the digitalization of the Department of Immigration and Passports. Some government offices now use email to communicate, and it helps to reduce resource wastage (time, documents) (Dhaka Tribune 2019). People can get tickets without going to the ticket counters. In recent times, they can quickly get access online (Daily Star 2020).

Moreover, the Government of Bangladesh has taken an initiative to digitalize the rail ticketing system. It is quick and easy to get rail tickets online and prevent tickets in the black market (Daily Tribune 2018). The Government of Bangladesh is building Hi-tech parks for promoting the IT industry, increasing employment opportunities, and developing human resources. The land management system is also being digitalized.

2.3 E-governance

E-Government is... ‘the use of ICTs, and particularly the Internet, as a tool to achieve better government’ (OECD, 2003). ‘E-Government is the use of Information and Communication Technologies in public administrations combined with organizational change and new skills to improve public services and democratic processes’ (EU, 2004). Electronics governance involves using information and communication technology and its numerous applications by the Government to provide information and e-services (that is served through electronic means) to the country's citizens. E-governance can be referred to as the use and application of ICT in public administration to conduct effective management of data and information to enhance public service delivery for the empowerment of citizens (Rahman, 2016). Digital governance has started to provide various government facilities to citizens on the internet to save their time and money and reduce. Now anyone can get information about their getting passport, national id card, birth, death certificate, e tendering, driving license, bank account, deposit or withdraw money from the account, get bank statement, and other banking facilities. And all activities will be implemented without any physical presence of citizens (Khalil et al. 2002). According to the World Bank, “e-government refers to the use by government agencies of information technology tools, such as Wide Area Networks (WANs), the Internet, and mobile computing, that can transform relations with citizens, businesses, and other arms of the Government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved

interactions with business and industry, and citizen empowerment through access to information, or more efficient government management. The resulting benefits of e-government include less corruption, increased transparency, greater convenience, revenue growth, and cost reductions” (Panzardi, et al., 2002, pp.2). The UNESCO definition (www.unesco.org) is: “E-governance is the public sector’s use of information and communication technologies to improve information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. E-governance involves new leadership styles, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens, and new ways of organizing and delivering information and services. E-governance is generally considered a wider concept than e-government since it can bring about a change in the way citizens relate to governments and each other. E-governance can bring forth new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable, and empower the citizen.”

2.4 Models of E-governance

E-governance has myriad models in the academic bloc, such as the e-governance model of Layne and Lee, Andersen and Henriksen model of e-governance, models of World Bank, United States, Moon’s model, etc.

a. Layne and Lee Model

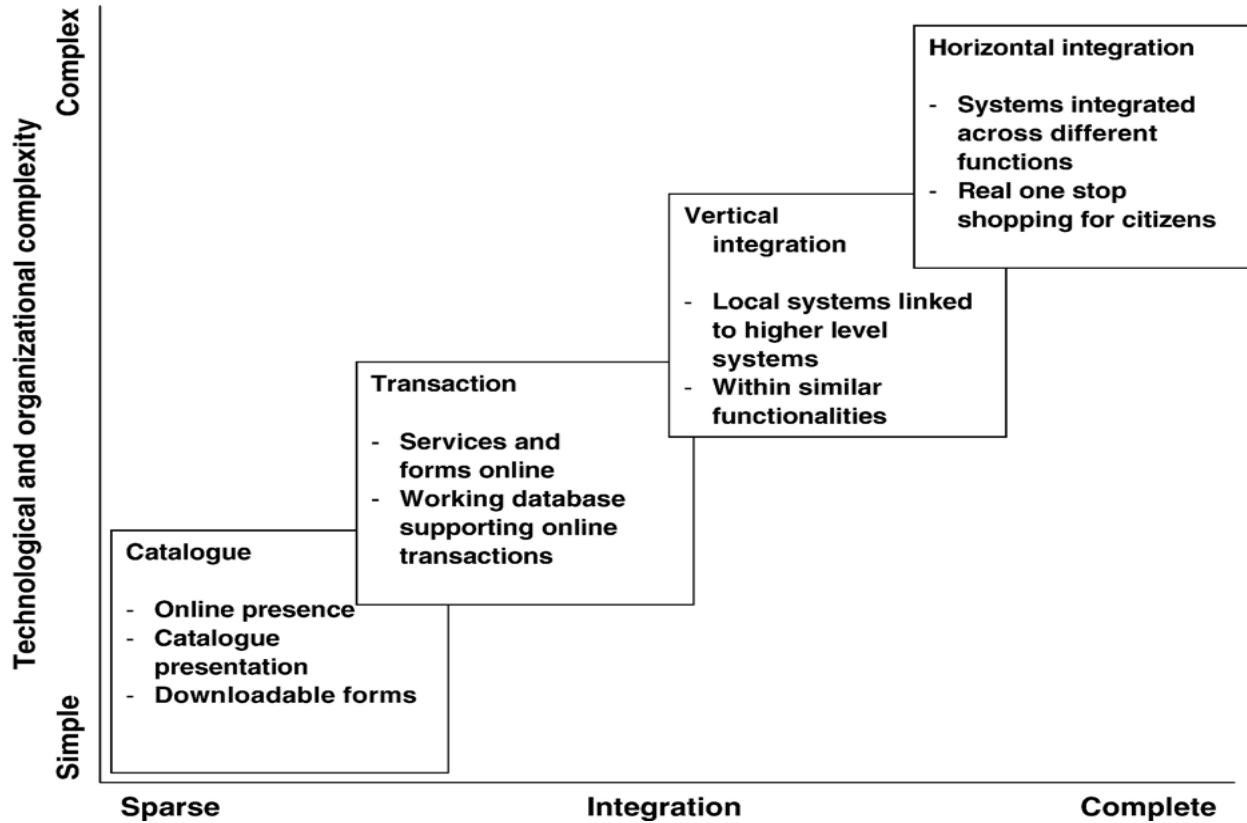


Figure 2.1 Stages of e-governance (The Layne and Lee, 2001)

****Adapted from: The Layne and Lee (2001)**

I. Cataloguing

In this stage, State initially attempts to bring all the information under a few websites that provide easy access to citizens for getting info through browsing various government websites. But the Government does not have adequate human resources at this stage. As a result, ensuring information security is a big challenge for the Government (West 2000). This cataloguing only allows little tips for the citizens. Besides, the Government creates a linkage of one website with another as well. One of the critical challenges is the allocation of information by various departments in various websites appropriately. The maintenance of data is another vital issue for consideration. Security and privacy issues sometimes become a challenging factor for the Government.

II. Transaction

In this stage, government officials and citizens attempt to exploit e-services. Electronic transaction frequently happens between agencies and customers which contributes to improved efficiency, effectiveness, and transparency in service delivery. However, this process also helps in the democratic process to resolve public disputes through hearings. Citizens are empowered to transact services by government officials easily. Thus, this stage simply brings revolutionary changes in the interaction between officials and citizens.

III. Vertical integration

Vertical integration refers to various government initiatives, including central and local Government, to render multiple services of Government. The local system is linked to higher-order functions with maintaining some similarities. In this stage, the key focus is on transforming the service delivery process through permanent changes in the government processes. In the long run, the organization will benefit when the whole process responds to the changes in technological changes.

IV. Horizontal Integration

This integration mainly focuses on horizontal relations among government officials at the same stage and keeping one-stop service facilities for the citizens. So, citizens will get easier services in-home settings. Besides, government offices will easily enable us to communicate with each other in a parallel manner.

b. Andersen and Henriksen model of e-governance

Andersen and Henriksen (2006) described the four-stage model of e-governance, which was applied in Denmark for evaluating state agencies. The stages include cultivation, extension, maturity and revolution. The first stage, “cultivation,” includes horizontal and vertical integration. The second stage, “extension,” includes widespread use of the intranet and in the fourth state “, maturity”, includes forsaking of the intranet, while the final stage “, revolution”, represent Sharing data and information across vendors.

c. World Bank Model of e-governance

World Bank (2002) developed the three-stage maturity model of e-governance. The first stage is 'Publishing', which means publishing information on websites. Governments deliver various services for the citizens who can easily be provided through technologies. Developing nations generally start e-governance through publishing information into websites which makes citizens enablers to keep off from bribery and so on while receiving services. The second stage is "Interacting", which means ensuring civic participation and taking feedback from the user end for policy proposals.

E-government can quickly help to connect a bridge between officials and citizens. Even, two way of communication contributes to creating public trust among the citizens. The dual system of interaction assists policymakers throughout the policymaking process. The third stage, "Transacts", means making government services online and ensuring secured online transactions. In this process, the Government transacts services through websites where citizens will get a direct link to access services. India and Brazil got huge success using e-government through transactions in recent times.

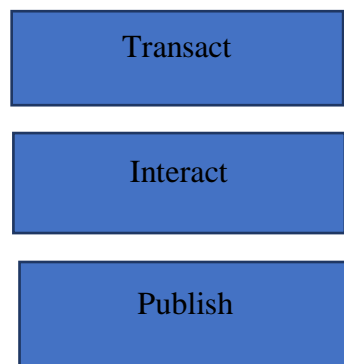


Figure 2.2 World Bank's e-governance stage

**Adapted from World Bank (2002) and modified by the authors.

d. Moon model of e-governance

Moon (2002) developed five stages maturity model of e-governance. The first stage is "simple information dissemination". It is based on one way of communication to share the info by the Government. The Government provides information through various platforms to disseminate information among the stakeholders. The second stage is "two-way communication", which means interaction between governments and stakeholders. This interaction is essential to get

feedback from the government side. In this way, citizens get engaged in the service delivery process. The third stage is “service and financial transactions”, in which there is allowed payment electronically. Citizens will get access to pay digitally for contracting services. The fourth is “integration”, including a vertical and horizontal system that enables sharing data and information among the departments. The last stage is “political participation”, which means access to the voting power of the citizens.

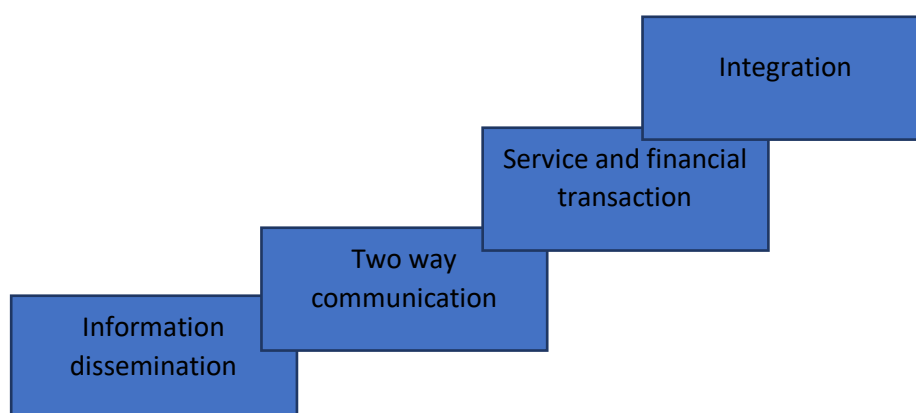


Figure 2.3 Stages of e-governance by Moon 2002 (**Adapted from Moon (2002) and modified by the author)

e. United Nations Model

The United Nations (2012) developed a four-stage maturity model of e-governance that includes emerging information, enhanced information service, transactional service, and connected service. The first stage is “emerging information” services which provides for sharing only information. In this stage, communication happens single-handedly from the organization. This is an elementary stage of communication. Citizens can get information sitting at home without any interruptions. The second stage is “enhanced information services”, which means developing two ways of communication. In this stage, information providers are attached to information receivers simultaneously. It is quite better than the emerging information stage of e-governance. The third stage is “transactional services”, which means two ways of the transaction between government and citizens. It is an improved stage of e-governance which is relatively better than emerging information and enhanced information. This stage is exchanged for getting services from the citizens. Paperless transaction happens in this stage without any interruptions. The

fourth stage is “connected services”, which means citizen and customer-centric service electronically. In this stage, citizens get complete service without any physical appearance. So, citizens will get all services electronically through a connected network.

2.5 Models of e-service

There are eight core models of e-service delivery to promote the e-governance system, which includes the Modified Quantitative Service Delivery Model, One Stop Shared Model, e-service integration model, the broadcasting model, comparative analysis model, critical flow model, interactive service model, and E-advocacy / mobilization, and lobbying model.

a. The Modified Quantitative Service Delivery Model

This model has identified some factors that influence effective and efficient service delivery processes in the organization. These factors include managerial accountability, resources, and leadership issues etc. All these factors can potentially influence service delivery. Managerial accountability includes accountability and transparency. Management of resources requires fiscal federalism and decentralization. Finally, structure and quality are two critical concerns in the leadership factor.

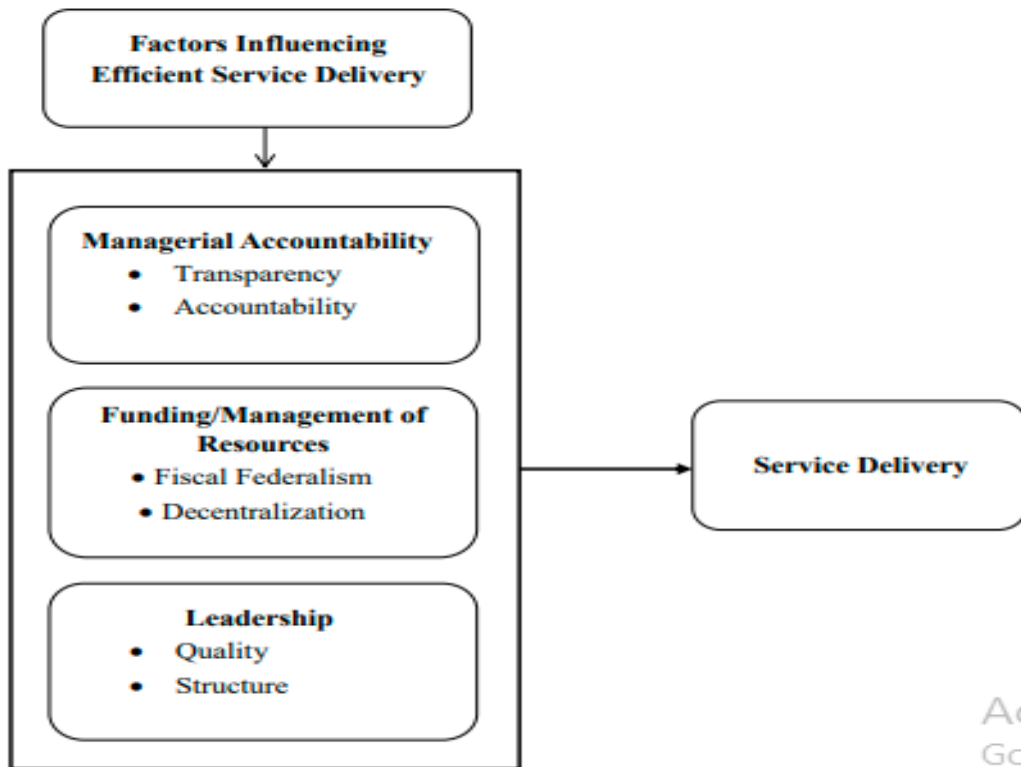


Figure 2.4 The Modified Quantitative Service Delivery Model(Adapted from Khalil and Adelabu 2012)

a. One-Stop Shared Model

The one-stop model aims to provide a real one-stop experience for delivering public service through a single stop portal. This model has been considered cost-effective through intergovernmental coordination and market-driven as observed and applied in UK Hong Kong. This model has also thought that it will help to reduce overall costs that led to customer satisfaction as this model encourages to run itself by own financing for the long run. As a result, the financial burden of the government reduces automatically. In terms of the benefactor of the one-stop model, it provides real-time service for the recipient. It involves three institutions to operate and continues the services among the service recipients. It has a coordinating committee, and this committee shall decide the list of services for the citizen. Then the second entities are responsible for the activities of the services. And finally, different departments are responsible for ensuring the accuracy of all of the services (Kohlborn et al. 2010).

b. E-service Integration Model

The service integration model has widely been used to evaluate e-service all over the world. Service integration has two parts. Service is related to a set of functions that has to be delivered by the government to ensuring service among the other governmental department, businesses, and citizens traditionally and electronically. E-services are provided by the information technology to ensure citizen satisfaction and cost-saving. The main component of the e-service is the service provider, service receiver and all channels. In terms of public service delivery, government and different government agencies are the primary catalysts of the service provider and citizens, businesses, and others are the service recipients. In terms of e-service, the internet has been considered the main channel while telephone, call center, public kiosk, mobile phone, and television are also considered the traditional means of providing a mechanism. It is to be noted that the government requires a good integration among the intra government and other branches of the government to ensure efficiency and effectiveness. In the e-service integration model, the desired services have to be accessible for the citizen and businesses. But it is needed to have an aligned and unified system to ensure the availability of the services. So, it is clear that service integration incorporates collaboration, coordination, and others that reduce the service provider's multiple divisions. As a result, it creates a single organization to provide various services with the help of separate and different organisations and agencies related to services (Khazaei 2016).

c. Broadcasting Model

The Broadcasting Model is one of the complex models of digital governance. It is based on information dissemination to make it available to the broader public domain. This model has applications in areas including making laws available online, budgetary (allocation and expenditure) information of the government, and publicizing initial information of the local/regional officials online and putting judicial decisions online.

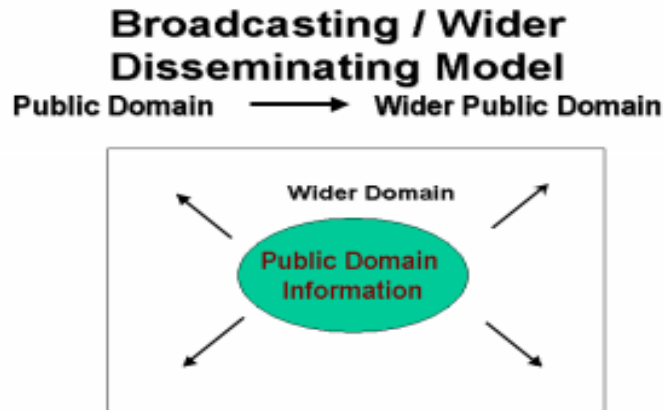


Figure 2.5 Broadcasting Model **Adapted from Fakeeh (2016)

d. Comparative Analysis Model

The comparative Analysis Model is a high thought model for developing countries. This model ensures the empowerment of citizens by giving access to information related to bad governance and underlying reasons. It also compares one model for another to replicate it successfully. It also helps to evaluate the effectiveness of current policies and establish disputes, ownership rights, etc.

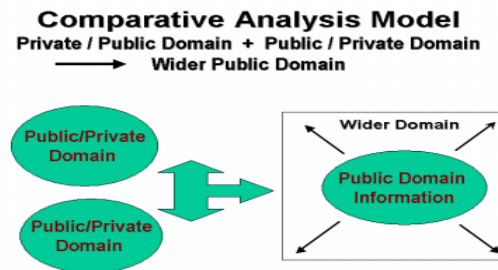


Figure 2.6 Comparative Analysis Model **Adapted from Fakeeh (2016)

e. Critical Flow Model:

The Critical Flow Model is based on publicizing critical value-based information through a digital platform to target audience groups that include the judicial bench, affected parties, opposite parties, media, etc. This model has applicability to reveal corruption-related data about government offices, research reports, inquiry findings, human violation reports, and environmental information.

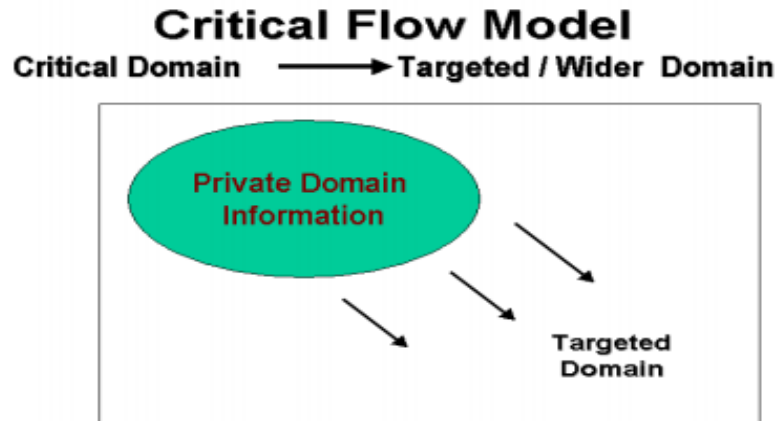


Figure 2.7 Critical Flow Model **Adapted from Fakeeh (2016) and presented by the author

f. Interactive Service Model:

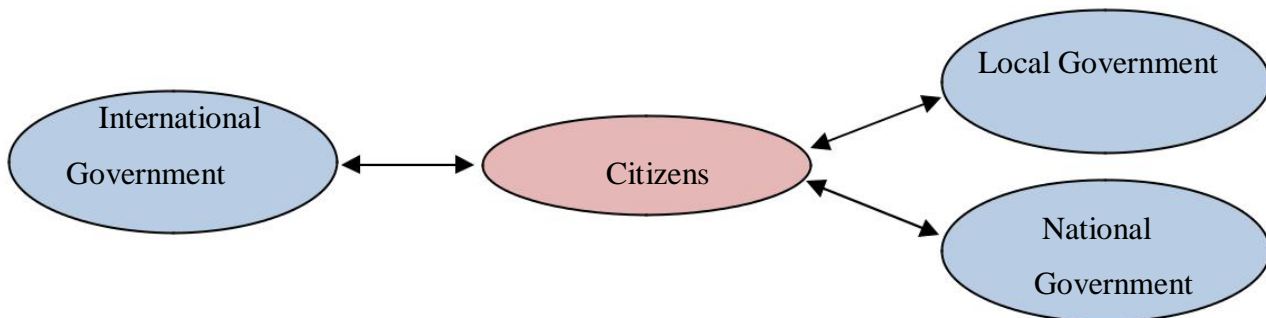


Figure 2.8 Interactive Service Model **Adapted from Fakeeh (2016) and designed by the author

In this model, all services will be directly available to citizens, and the government will respond quickly to offer service interactively. It emphasizes interactive government to Consumer to Government, including an online grievance redress system, an e-balloting system in voting, and taking various online polls from citizens (Fakeeh 2016).

g. E-Advocacy / Mobilization and Lobbying Model

E-Advocacy / Mobilization and Lobbying Model is the most common model of e-governance to mobilize civil society. Under this model, civil societies are brought together to get engaged in the decision-making process in developing countries. However, mobilization is based on strategic decisions, strengthening the flow of information, and proactive decisions. This model allows various virtual communities based on relatively similar status and values to build strong allies (Carter and Belanger 2004)

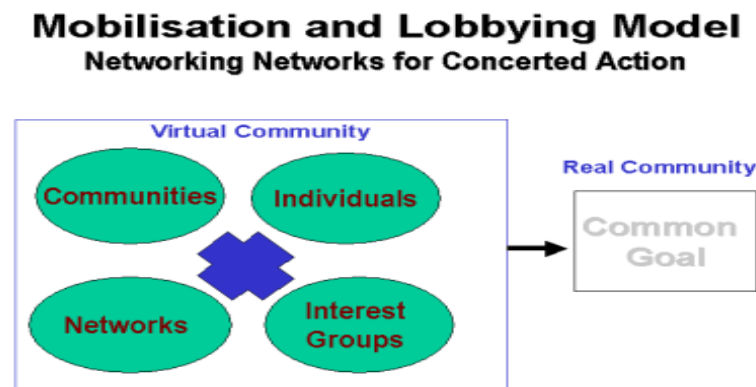


Figure 2.9 Mobilization and Lobbying Model

However, all the models of e-services and e-governance are based predominantly on western and developed country's perspective. The broadcasting model emphasizes high-level stages, including making laws available online, budgetary information of the government, all the information of the government offices, and so on. The comparative analysis model emphasizes performance evaluation, resolving disputes in online settings and ownership rights, etc. The Critical Flow focuses on judicial services, including affected parties, opposite parties, media, etc. This model is used to eliminate corruption through research reports, inquiry findings, human violation reports, and environmental information. The Interactive service model is based on interactive services, including an online grievance redress system, an e-balloting system in voting, and taking various online polls from citizens. The e-advocacy model is designed to mobilize civil society. In this model, civil societies are brought together to engage in decision-making through the strategic decision process. It also emphasizes the virtual community to build a strong ally. Considering the existing models, it is evident that all the models are advanced level supply-driven for better service delivery focusing on promoting human rights, justice,

community empowerment, and so on. In the context of Bangladesh, we are not staying at the pinnacle of digitalization in the service delivery process. As a result, a new framework is highly imperative to design to evaluate the effectiveness of service delivery at the local level.

1. <https://www.ijais.org/archives/volume11/number1/fakeeh-2016-ijais-451567.pdf>

However, the study has found only five models strongly related in this study to evaluate the effectiveness of e-service delivery in the case of Union Digital center (UDCs). These five models are the Modified Quantitative Service Delivery Model (MQSDM), E-service Integration Model, One-stop/shared Model, Comparative Analysis Model, and Broadcasting Model. Some key variables have been identified from these models to evaluate the effectiveness of e-service delivery in the union digital center in Bangladesh.

<i>Broadcasting Model</i>	<ul style="list-style-type: none"> • Making laws available online • Publicizing initial information of the local/regional officials in online 	<ul style="list-style-type: none"> • Policy and Legal Framework of Union Digital Center
<i>Comparative Analysis Model</i>	<ul style="list-style-type: none"> • effectiveness of current policies • Access to information 	<ul style="list-style-type: none"> • Policy and Legal Framework of Union Digital Center • Information regarding service
<i>One-stop/shared Model</i>	<ul style="list-style-type: none"> • Potential cost savings in the long run because of low redundancy • High customer satisfaction through real one-stop shopping 	<ul style="list-style-type: none"> • Impact on service delivery
<i>E-service Integration Model</i>	<ul style="list-style-type: none"> • Customer Support 	<ul style="list-style-type: none"> • Impact on service delivery
<i>The Modified Quantitative Service Delivery Model (MQSDM)</i>	<ul style="list-style-type: none"> • Leadership Quality • Leadership Structure • Managerial Accountability 	<ul style="list-style-type: none"> • Management system and institutional capability for service delivery

Figure 2.10 Variables from e-service models

Based on five models of e-service, a theoretical framework has been designed considering relevant variables required conducting a study on the effectiveness of e-service delivery of Union Digital Center in Bangladesh.

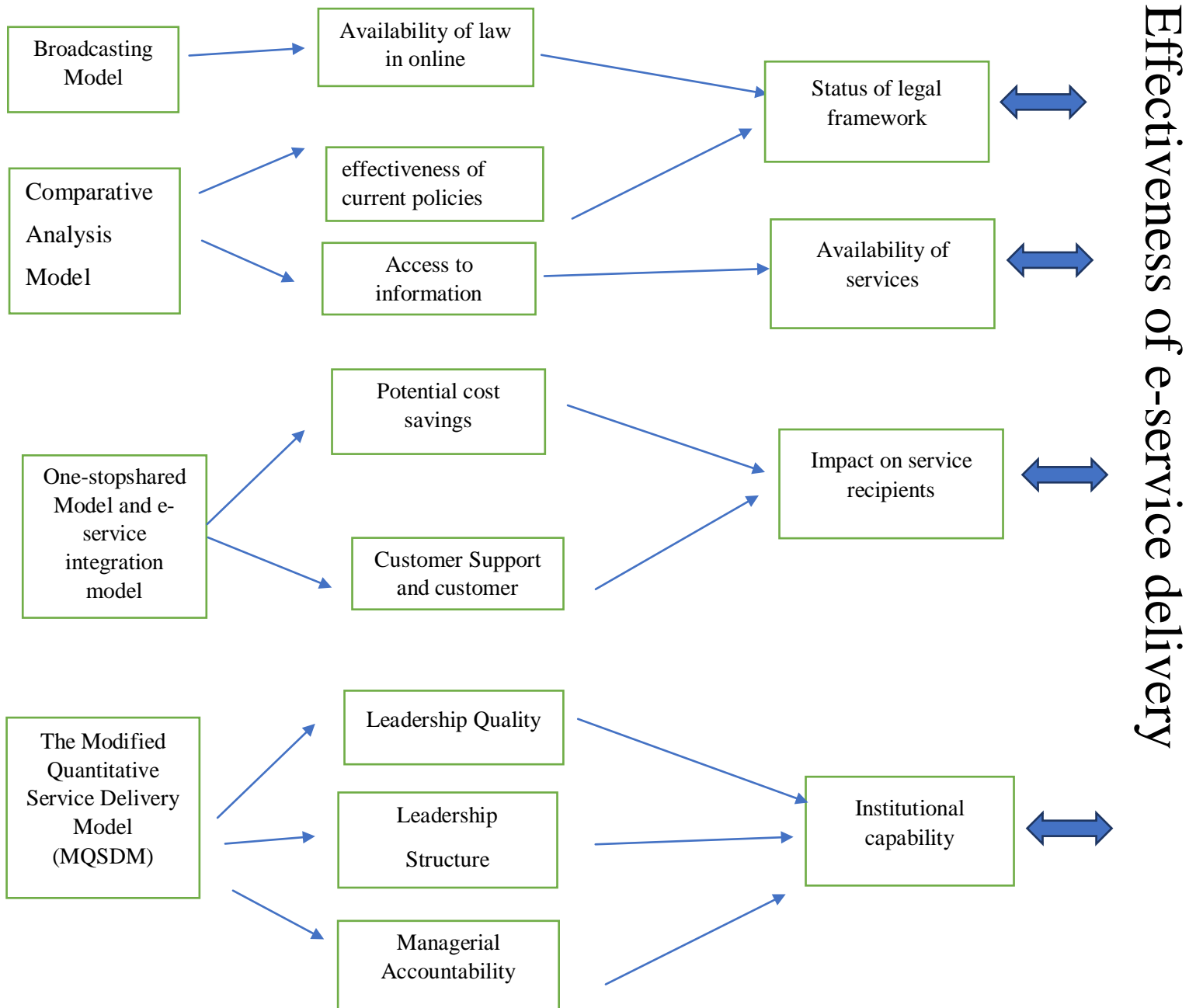


Figure 2.11 Analytical Framework

Based on the literature review and analysis of relevant e-service models, the conceptual framework has been designed. This framework includes four independent variables, including the policy and legal framework of UDCs, the institutional capability of UDCs, structure and management system and nature of service delivery of UDCs. These variables influence the effectiveness of e-service delivery in the union digital center at the local level in Bangladesh.

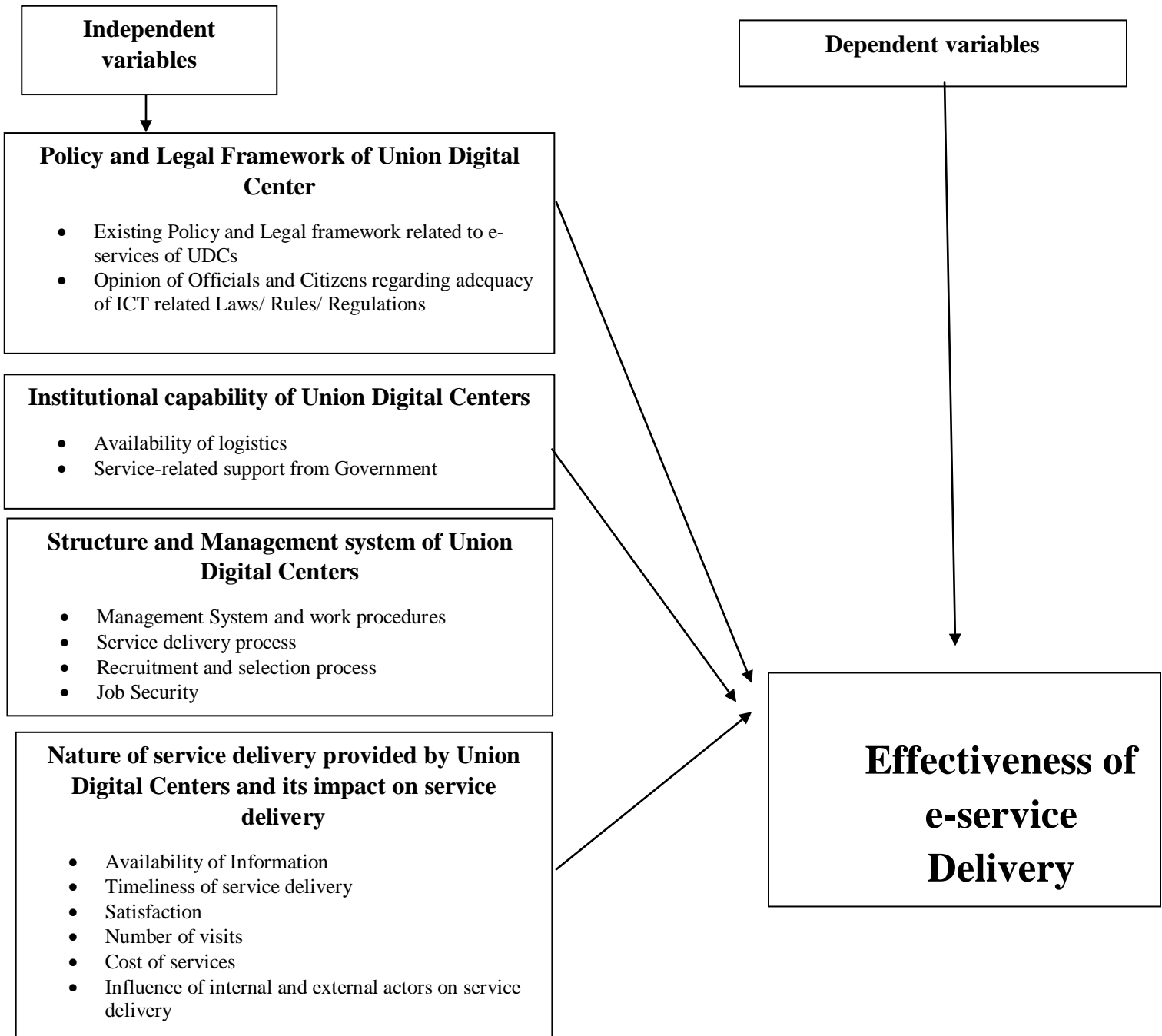


Figure 2.12 Effectiveness of e-service delivery in Union Digital Center

2.6 Operational Definition of Variables

a. Effectiveness

Effectiveness is result-oriented. The **effectiveness** in the organization is a combination of strategy and proper knowledge management to measure to what extent organizational goals are met (Zheng et al., 2010). This paper evaluates the policy and legal framework of Union Digital Center, the institutional capability of Union Digital Centers, nature of service delivery provided by Union Digital Centers and its impact on service delivery, and structure and management system of Union Digital Centersto measure the effectiveness of e-service delivery at Union Digital Center,

b. Local Government in Bangladesh

There are two types of local government bodies in Bangladesh: rural local government and urban local government. Rural Local Government is divided into three tires: Zila Parishad, Upazila Parishad, and Union Parishad. And the Urban Local Government is divided into two tires; Pourashava (for smaller Municipalities) and City Corporation are in order.

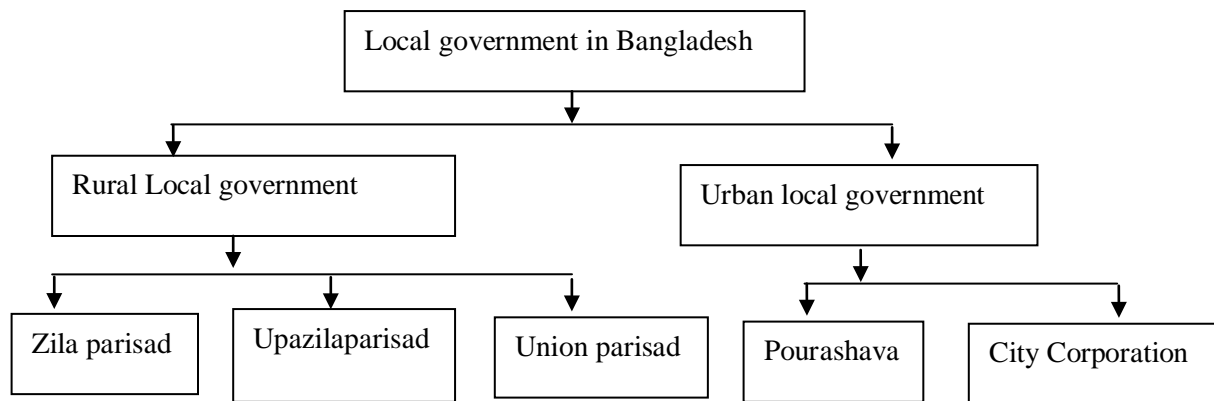


Figure 2.12 The Local government structure in Bangladesh (Siddiqui: 2005)

c. Policy and legal framework

The Peoples' Republic of Bangladesh government has taken various Policies, Laws, Rules, and Regulations relating to E-Services. These are very significant to control the misuse of all activities done by electronic media and ensure the proper applications of e-services. This study will examine the existing policies and legal framework relating to Union Digital Center, which is essential to fulfilling this research's objectives.

d. The institutional capability of UDCs

It is challenging to ensure e-services without proper infrastructure and logistic support. It includes; power situation, computer, and accessories at the workplace, internet connection at the workplace, internet speed at the office, etc. Infrastructure and logistic support include power situation, Computer, accessories, Internet connection at the workplace, and Internet speed at the office. The government of Bangladesh has taken various steps to provide this support to the union Digital Centers (UDCs) and started various training programs with the help of private sectors to develop the people who are related in ensuring e-services to the people of the local area. The study examines logistics at UDCs provided by the Government, the level of Internet Speed and service-related support from Union Digital Centers. Without ensuring the institutional capability of UDCs, it will be challenging to deliver services effectively.

e. Structure and Management system of UDCs:

The management system includes managerial capacity, leadership style, and coordination in services. This study has examined UDCs' establishment, location, gender identity of entrepreneurs, qualification of entrepreneurs, availability of entrepreneurs, service delivery process, monitoring system, training opportunity, decision-making status, recruitment and selection process, and job security. In this study, the Management system of Union Digital Center (UDCs) has emphasized the managerial capacity to run this center accurately. It further highlights the coordination system between service providers and service receivers of UDCs. No union information service centers (UDCs) can provide better services to the people of the local area without a proper management system. The study attempts to explore whether the existing management system influences the service delivery processes of Union Digital Center. The Peoples' Republic of Bangladesh government has taken various policies, laws, rules, and regulations relating to e-Services. These are significant for controlling the misuse of all activities done by electronic media and ensuring the proper applications of e-services. This study also examined the existing policy and legal framework related to e-Governance which is essential to fulfilling this research's objectives.

f. Nature of service delivery provided by UDCs

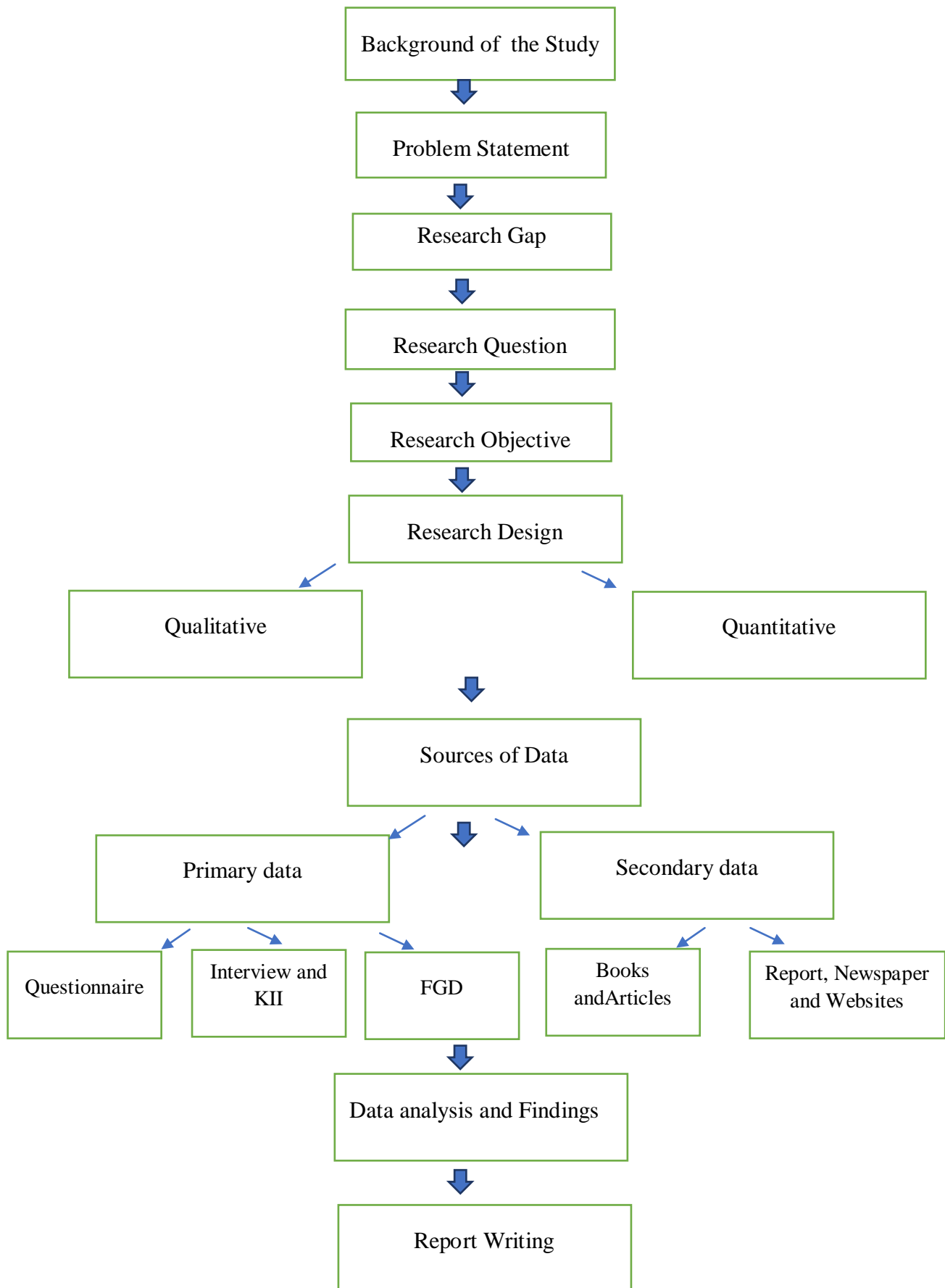
Assessing existing service and access to information will be analyzed based on data availability, timeliness and satisfaction. Access to information refers to the right of the citizen over information. If all the information related to e-services are straightforward access to the people, it will work as a development tool for the local level people; the paper studied existing performance about various services provided to citizens to evaluate the e-service delivery of UDCs. Besides, it has also considered satisfaction of Union Parishad Chairman regarding UDCs' performance, the behaviour of the UDC entrepreneurs and service recipients' level of satisfaction, the influence of actors on UDC's functions, nature of internal actors' power, the spirit of external actors' influence, information of the services of UDCs, source of information regarding services of Union Digital Center, mode of application and way of receiving benefits, number of Visits at UDC, timeliness in service delivery, cost of service received from UDCs, the distance between Union Digital Center and service recipients' home and its impact on services, transportation cost of receiving benefits, positive outcome of services offered by Union Digital Center, the relation between Chairman and UDC entrepreneur and its effect on service delivery and political affiliation of UDC entrepreneur and its impact on services of UDCs. The study has also emphasized identifying significant challenges that may affect e-service delivery at the local level. In this regard, challenges have been categorized into entrepreneurs' challenges, institutional challenges, logistics and management related challenges, and internal factors and External Factors. Finally, this chapter has envisioned a conceptual framework of this study on the effectiveness of e-service delivery in the union digital center in Bangladesh. In the context of Bangladesh, most of the models of e-governance and e-service are not applicable. Most of the services are delivered traditionally where citizens are required to attend physically. In e-service delivery at the local level, the paper has studied relevant literature and models to identify key variables that influence e-service delivery at the local level.

Chapter Three: Research Methodology

This chapter includes the research design of the study. In addition, data collection methods and sampling methods have also been discussed. Finally, the chapter describes the area of the study, data collection instruments, triangulation of data and data processing, and analysis plan. This research aims to explore the effectiveness of e-services provided by the UDC at the Union level through a systemic process (Burns 1997; Mackenzie and Knipe 2006a). This research has also examined and described the management system and all the functions of the Union Digital Centers. So, this is exploratory and descriptive research.

3.1 Research Design

Generally, the research method can be classified into two categories (Williams 2007; Goundar 2013; Kothari 2004). a. Qualitative b. Quantitative (Creswell et al. 2004a; Burns and Groove 2014). A mixed-method (qualitative and quantitative) design has been considered to conduct and carry out this study (Creswell et al. 2004b; Tashakkori and Creswell 2007; Burns and Groove 2014).



3.2 Qualitative Approach

Qualitative research focuses on specific situations and emphasizes words rather than numbers (Flick 2018; Patton 2005; Aspersand Corte 2019a, Silverman 2020). Qualitative research methods help to get a significant result from the intensive end of the research undertaken (Aspers and Corte 2019b). In this research, a qualitative approach has been used because it is exploratory, and it seeks to listen to the stakeholders and build a picture based on their ideas and opinions. Moreover, the research has been conducted through interpreting field and secondary data that allows the qualitative approach. In this study, a qualitative approach has also been used for analyzing the opinion of service providers and service receivers (mass people) about different activities and performance of public service regarding e-governance (Ara andSheuli 2020).



Figure 3.1 Qualitative Approach

3.3 Quantitative Approach

Primarily quantitative research depends on collecting quantitative data and analysis of data (Mackenzie and Knipe 2006b; Muijs 2010). A quantitative approach has been used to classify the services available in UDCs and other numerical data collected from the field study in this research.

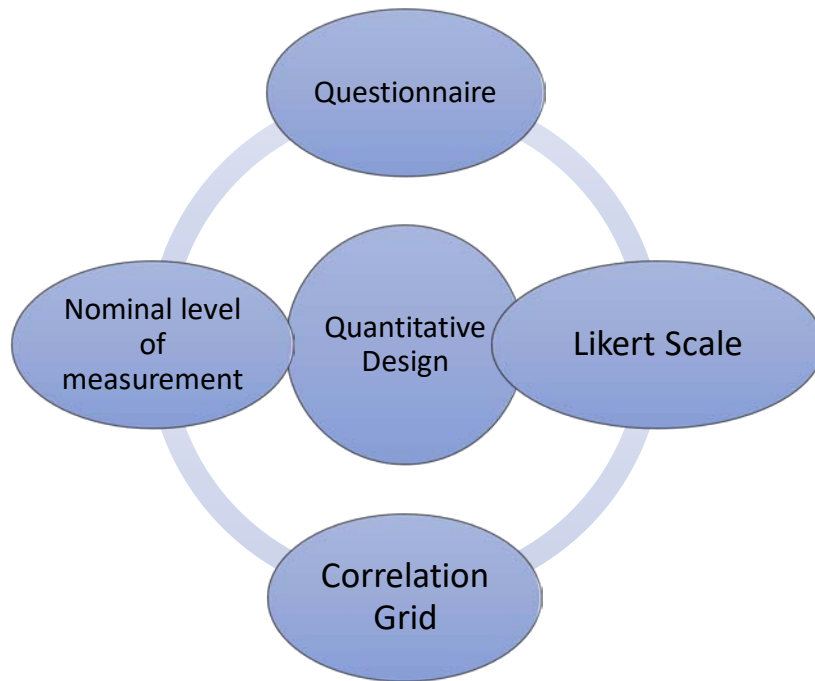


Figure 3.2 Quantitative Approach

3.4 Data Collection methods

There are six major data collection methods commonly seen in practice that have been used to collect data for this research (Jonson and Turner2003). The current study has obtained data from both primary and secondary sources. Preliminary data for the analysis has been collected using Survey Method through interviews, questionnaires, and KII and FGD.

- **Survey Method:**

Most of the people in Bangladesh live in the local area. So, the survey method was used in this study to collect data from the vast people by following both the structure and unstructured questionnaire as Subashini and Kavitha used to collect data (Amin and Goldstein 2007; O'Neill et al.2013; Subashiniand Kavitha 2011).

- a. **Questionnaire Survey:**

The questionnaire is composed of both close and mixed ended. The study has covered close-ended questions so that relevant data can easily be arranged and understood. A questionnaire survey was conducted to collect data from the service recipients. Besides, some open-ended questions helped to get detailed answers and opinions (Mathers andHunn 1998; Roopa and Rani 2012). At the same time, the open-ended questions have given a new dimension to the research

work. The questionnaire has been administered on the total number of 240 males and females of different localities.

b. Interview:

After the questionnaire is done or even when the researcher had the research questions in mind, the interview process can be done either with the questionnaire or by keeping the research questions in mind as it is a powerful data collection method that was done in one to one interaction to find out the in-depth information from the respondent. (Teddlie and Tashakkori 2009)., Interviews have been conducted with each entrepreneur of the 16 UDCs and UP Chairmen to collect data from the study area. The interview has been done face to face and over the phone.

c. KII:

Key Informant Interview (KII) has been considered an in-depth qualitative interview that incorporates community leader, professional and academician, etc. (Kumar 1989, Gilchrist 1992, Faifua 2014). In this study, 6 UNOs (who have performed as UNO from 2011-2015) and 2 Local Government experts have been consulted as KII to get an in-depth answer to the specific questions. The interview was taken through using the Zoom application and over the telephone as well.

• **Focus Group Discussion:**

Focus group discussions apply for multi-purposes like obtaining general information, finding new ideas, diagnosing critical problems, and checking qualitative data (Stewart et al., 2009). As mixed methods have been used to conduct this study, FGD was used to cross-check and find out the real scenario through open-ended questions in this study.

3.5 Sources of Data:

Data were collected from different sources. Primary and secondary data were used to conduct this research. Secondary data was compiled from various academic journals and articles, books, academic reports, seminars, government ICT and e-governance related reports, ICT ministry website, A2I, reports from national and international donor agencies, civil society reports, daily newspaper, and electronic media news. Primary data was collected through physical visits of the Union Digital Center questionnaire survey, open in-person interviews with service recipients, UDC entrepreneurs, and Union Chairman, UNO (those who were actively performing as Upazila

Nirbahi Officer in 2011 to 2015), local and government service delivery expert. As qualitative methods have been used, focus group discussion (FGD) was conducted among service recipients and entrepreneurs to cross and collect the actual qualitative data from the research area. It includes the Service recipients, UDC entrepreneur, Union chairman (Elected representative), Upazila Nirbahi Officer (those who have active participants and worked as UNO from 2011 to 2015), local government rural development expert, and expert on government activities and function. Apart from the above source's international agencies like the UN, World Bank is working on e-governance and service delivery. So, they were also the sources of information.

Primary Source	• Questionnaire
	• Interview
	• KII
	• Focus Group Discussion
Secondary Source	• Academic journal
	• Article
	• Government Report
	• Government Website
	• Books
	• News Report

Figure 3.3 Source of Data

3.6 Area of the Study

The study has chosen four divisions between the eight divisions (Dhaka, Chottogram, Rajshahi and Sylhet) and four districts using cluster sampling. After that, sixteen UDCs from 8 Upazilas (two UDCs from each Upazila) have been selected considering urban and local regions. Four districts were chosen randomly, namely Dhaka, Bogura, Chittagong, and Sylhet. Dhaka has been selected as it is the capital city of Bangladesh and has been considered the administrative and business Hub of Bangladesh. Besides, Dhaka is a densely populated and rapidly urbanized area in Bangladesh. Chittagong has been considered as a second Business hub and business capital of Bangladesh. Rajshahi Division is one of the old divisions, and it is prevalent for agricultural production. Sylhet Division has been taken from the northeastern part of Bangladesh.

No		District	Upazila	Union
1	Chottogram	Brahmanbaria	Nabinagar	Barikandi
				Salimgang
			Bancharampur	Tejkhali
				Dorikandi
2	Rajshahi	Bogura	Sherpur	Garidah
				khamarkandi
			BoguraSadar	Lahiripara
				Fapor
3	Sylhet	Sylhet	Sylhet Sadar	Kandigaon
				Mollargaon
			Dakshin Surma	Baraikandi
				Tuker Bazar
4	Dhaka	Dhaka	Keraniganj	Teghora
				Konda
			Savar	Six no Birulia
				Seven no savar

Figure 3.4 Area of the study

3.7 Sampling Method

The study has adopted random sampling, purposive, and multi-stage sampling. Random sampling has been followed here in selecting respondents from the mass people, and purposive sampling used here to select the respondents from service providers of the UDCs.

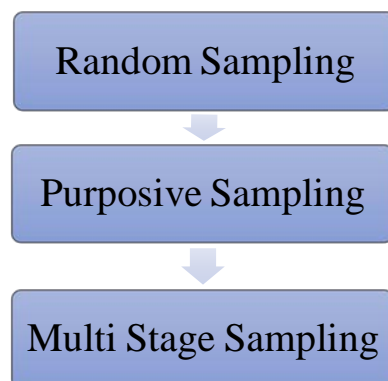


Figure 3.5 Sampling Techniques

The sampling formula of Taro Yamane is a very prominent one in the field of social sciences to conduct social research (Israel 1992). The study follows the sampling formula by Taro Yamane as below:

$$n = \frac{N}{1 + N + (e)^2}$$

$$n = \frac{1500}{1 + 1500 * (0.05)^2}$$

So, n= 315.789

n= the sample size,

N= the population size,

E= the acceptable sampling error

Based on the pilot study, it has been found that 1500 recipients received various services from 16 union digital centers in the last month of October 2019. According to the sampling formula of Taro Yamane, 316 respondents are the minimum number for conducting a study to prove valid data. So, total 320 citizens were selected for the study who received services from UDCs. The study has taken 376 respondents for this study, considering this whole number. To complete the study, 240 respondents who received services were taken randomly from 16 UDCs selected from four districts: Dhaka, Bogura, Brahmanbaria, and Sylhet. Besides, 16 UDC entrepreneurs and UP Chairman have been interviewed in this study. Further, KII was conducted among government officials and experts from regarding field to get in-depth information.

Table 3.1 Number of the respondents

Sl. No	Mode of Data Collection	Respondents	Number of respondents
1.	Questionnaire survey	Citizens (15 respondents from each of 16 Union	240

		Parishad) 5 X Government Service 5 X Commercial Service 5 X Information Service	
2.	Interview	UDC entrepreneur (16 entrepreneurs from each of 16 UDCs)	16
3.	Interview	UP Chairman (16 UP Chairmen from each of 16 Union Parishad)	16
3.	KII	2 X Local Government Expert 6 X UNO	08
4.	FGD (16)	Service recipients and UDC entrepreneurs 5 X Service recipients and 1 X UDC entrepreneur from each of 16 Ups	96
	Total		376

3.8 Data collection instruments

Table 3.2 Data Collection Instrument

No.	Data Collection Methods	Instruments
1.	Questionnaire Survey	Question paper, Questionnaire
2.	Interview	Personal Interview, Using Recorder
3.	KII	Personal Interview, Using Recorder

3.9 Triangulation of Data

Table 3.3 Triangulation of Data

No.	Areas of Triangulation	Ways
1.	By study (Literature Review/Conceptual Framework)	Relevant articles, Government Reports, and statements.
2.	By data Source	Primary and Secondary
3.	By method	Survey method, questionnaire method, and FGD
4.	By theory and Concept	Analytical Framework

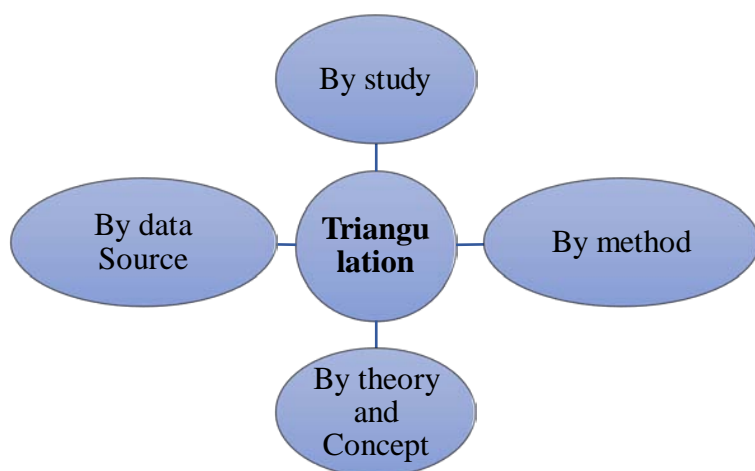


Figure 3.6 Triangulation of Data

3.10 Area of the study

The study intends to represent the picture of e-service provided by the UDCs at the union level. Some sample areas have been selected here, which may represent all the unions of Bangladesh. 16 UDCs have been chosen from five districts, namely Dhaka, Bogura, Brahmanbaria, and Sylhet.

Table 3.4 Union wise respondents

District	Upazila (02)	UDC (04)	Respondent	Total
Dhaka	Nabinagar	Barikandi	15	60
		Salimgang	15	
	Bancharampur	Tejkhali	15	
		Dorikandi	15	
Bogura	Sherpur	Garidah	15	60
		khamarkandi	15	
	BoguraSadar	Lahiripara	15	
		Fapor	15	
Sylhet	Sylhet Sadar	Kandigaon	15	60
		Mollargaon	15	
	Dakshin Surma	Baraikandi	15	
		Tuker Bazar	15	
B-baria	Savar	Teghora	15	60
		Konda	15	
	Keraniganj	Six no Birulia	15	
		Seven no savar	15	
Total				240

3.11 Data processing and analysis

Quantitative data was organized characteristically, and then a statistical method (e.g. percentage analysis) was applied. Collected data has been presented through tables, graphs, bar and pie charts according to the demand of this study. All information has been analyzed numerically. Moreover, the collected data and data have been processed through the Statistical Package for Social Science (SPSS), Google Form and Microsoft Excel.

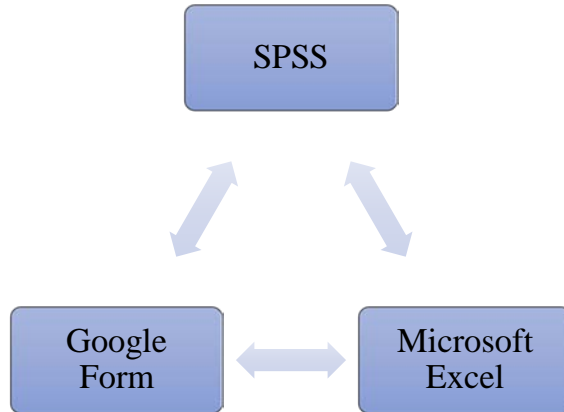


Figure 3.7 Statistical Tool for quantitative data analysis

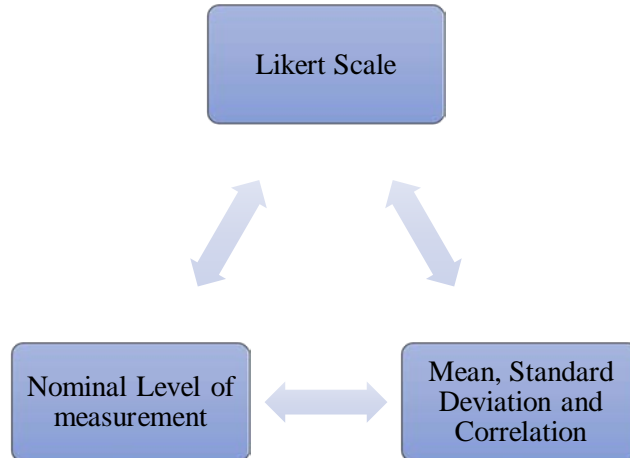


Figure 3.8 Statistical technique for quantitative data analysis

A quantitative approach was used to generalize the existing state of compliance from the data received from the respondents. Qualitative data were analyzed in this research by cross-checking the data collected from the various respondents. All the documents, facts, and figures were listed first according to the priority. Then all data have been discussed and analyzed to find out the result of the study. Primary data has been collected and then quantified using mean and standard

deviation to analyze this study. Besides, a correlation grid has been used to build a relation between cost and service delivery. Timeliness, the number of visits, and cost are essential tools to measure and evaluate the service delivery process in the Union Digital services. Another essential variable is the level of satisfaction of service recipients that have been calculated using the Likert Scale.

Entrepreneurs of the Union Digital Center, UP chairman and experts, collected data from them and analyzed it based on their statements to analyze the interviews and questionnaires taken from the service recipients. And finally, the study attempts to use those categories to determine the results or finalize which statements or answers have been mentioned more or have been more helpful. In this study, fivepoints of the liker scale have been used to assess the effectiveness of e-service delivery.

Table 3.5 Five Point of Likert Scale of effective service delivery

<i>Scale</i>	<i>Levels of Satisfaction</i>
5	Very Satisfied
4	Satisfied
3	Moderate
2	Dissatisfied
1	Very Dissatisfied

3.12 Strategies Applied for Data Collection and Validation

E-service delivery in a local government area is susceptible, and it is related to the government and service provider. Having good cooperation and necessary information from the UDC entrepreneur was one of the significant challenges, including taking permission from the Union chairman as the UDC entrepreneur had to talk to anyone regarding Union Parishad. Among all of the respondents, it was easy to interview the UDC entrepreneur, UNO, chairman, and local government expert because they are highly educated and expert to give interviews on their issues. But as regards the service recipients, they lack the expertise to provide consultations on the matters so studied. As a result, the service recipients were interviewed in their residence for an open and accessible discussion to collect authentic information.

Chapter Four: ICT Policy and Institutional Framework

ICT Policy articulates the roles, responsibilities, and functionalities of institutions associated with ICT. This chapter presents an overview of the People's Republic of Bangladesh government relating to ICT like ICT Policy 2002, ICT Act 2006 and ICT Policy 2009. Further, this chapter highlights the significant change in the policies to describe the evolving scenario of the ICT framework from the Bangladesh context. This chapter describes a summary of various institutional arrangements associated with online service delivery.

Part A: ICT Policy of the Government of Bangladesh

The ICT Policy 2002

Since the 1960s, Bangladesh has been using information and communication technology. To expand the use of different sectors in government, the Bangladesh government has taken the initiative to adopt an ICT policy in 2002. These modern technologies are being used for processing information in all aspects of the economy and society of Bangladesh. This policy will give a clear guideline for developing ICT in Bangladesh to ensure sustainable economic growth. At the same time, this ICT policy will also create an efficient management and operation system for the public and private sectors.

- **The vision of the ICT policy 2002**

This policy's prime vision and mission are to build an ICT-driven nation that will transform into a knowledge-based society by the end of 2006. The government expects to confirm access to information for every citizen to empower people and increase Democratic values and norms for sustainable economic development by using the infrastructure for human resources development, governance, e-commerce, banking and insurance, public Utility services. And all of these services will be provided through online ICT.

The world has been changing rapidly. Bangladesh has to prepare to advance prudently in the competitive global ICT market to keep pace with the digitalised world. Bangladesh has to produce many ICT experts because the demand for talented and trained human resources in ICT increases globally. To promote ICT expertise, an extensive introduction of ICT curricula in public and private educational institutions is a must. At the same time, different types of facilities

like computer training shall be built to become trained in ICT with the assistance of Donor agencies, non-government organizations, and other development partners. Public and private educational institutions like the university, colleges and technical institutions shall be the key actors in making an ICT-enabled society and producing expert graduates. Public Universities have to inaugurate and start computer-related subject and provide four years of engineering degree and government have to allocate sufficient resources for that institution. An adequate number of teachers must be trained since the shortage of trained and qualified teachers and trainers for ICT training is a Bottleneck to human resources planning. The government is trying to increase IT-Capacity for Teachers and professionals and establish Training Institutes (TTI), including TTCs and NAPE. PTI institutions start to teach the teachers and trainers, intensive post-graduate diploma courses have to be introduced.

Bangladesh has already joined the Fiber Optic Submarine Cable network to establish direct connectivity with the international information and communication pillar. Cyber Kiosks will be set up in all Post offices at the Union complex and Upzila complex to ensure access to lead with the help of private investment. All the district headquarters and Upazila levels will be connected with high-speed internet. At the same time, all of the educational institutions and libraries will be covered under the internet, and research funds will be allocated. Moreover, solar power will be used as alternative means of electricity to ensure an uninterrupted power supply in the remote area. Bangladesh's computer council will play an active role, primarily focusing on need-based fundamental and applied research contributing to improving the quality and efficiency of the application to our ICT industry. Research and Development on the ground have been planned to formulate Bangla text processing, Bangla voice recognition, translation, and more Bangla content for internet users.

- **Discussion:**

When we talk about ICT industries, software industries will come first. Local software industries will be privileged and encouraged in price preference, and the government will support local software industries. At the same time, government authorities will frequently talk with software companies, associations, and developers to share their ideas and experience through organizing seminars, training, and international conferences. ICT incubators will set up with the help of the government. International entrepreneurs will be welcomed to invest in this sector to explore the multi-billion dollar outsources market. In terms of hardware industries, the government required

mega capital investment, and to fulfil this mega-investment, foreign investment will be offered special incentives and preferences so that foreign companies can establish companies. Universities and other concerned institutions will be equipped with ICT devices, and laboratories shall be installed to produce a highly skilled workforce as the local hardware industries are too small, that why foreign export shall be targeted. Bangladesh will get a competitive advantage of cost-effective labour in this industry to export hardware and software. The government will encourage and emphasize e-commerce business through Government to Government (G2G) and Government to Business (G2B) and the legal framework shall be considered. Internet banking has to inaugurate for ensuring innovative banking to accelerate E-commerce. Government has to use ICT within the Pubic Administration to reduce wastage of public resources and ensure efficiency and effectiveness and increase quality service.

Copyright Act 2000 shall be implemented for software copyright provision, and this act has to implement as early as possible to protect against computer crimes such as computer fraud, hacking and damage to programs and data and introducing/spreading Computer viruses. It also ensures the data security setting of encryption standards and international agreements. Different government agencies like police, NBR, BAC, and Armed Forces can use Information technology in their various activities. ICT can make faster health care facilities and digital documentation like telemedicine, health education data entry, etc. Especially telemedicine system has to be introduced all over Bangladesh. Computer-based Management Information System (CMIS), with suitable Wide Area Network (WAN) and Local Area Network (LAN), shall be introduced for the Supreme Court and for the District Courts and Tribunals to increase the capacity and faster service of the judiciary of Bangladesh with different modules like a case management module, a legal framework module, and a court administration module. A national taskforce shall be created headed by the Prime Minister to make the best utilization of ICT and exploit its immense potential in the economic, social, commercial, and scientific fields. This body will guide, update, set standards, implement, and monitor the national IT policy. Although this policy is not comprehensive enough, this ICT Policy of 2002 was one of the vital attempts to set out E-governance in Bangladesh.

Information and Communication Technology Act, 2006:

Information and Communication Technology Act, 2006 is an essential instrument to provide legal guidelines for the use of technology, security, and safety. This act is divided into various sections where each section articulated a specific issue regarding ICT. This law rightly organizes uncontrolled discipline. Social systems are followed by the law to establish a peaceful environment. Law is essential to uphold human rights. Unruly citizens are forced by law to manage the mob. Lawfully proposition theory or principle can end any kind of rebellion.

On the other hand, the law ensures equality, and it serves as a way of the norm to control individuals, groups, and social communities. Law also provides to communicate an acceptable manner for the citizens. Through the process of implementation of the law, people are protected from the brutal activities of criminals. Nowadays, ICT law is fundamental in the matter of. Cybercrime includes but not limited to hacking, spreading of viruses, child pornography, and other illegal activities on the internet. The ICT law of the country formulated the Information & Communication Technology Act 2006, which provides that digital certificates should be used for the signing of documents. The law also offered setting up the controller of certifying Authorities and the licensing of the certifying Authority. The legal approval of enforcement by the authorities has been justified through this provision of law. The rules under this Act have been organized under Information Technology (Certifying Authorities) Rules, 2010. This promulgates the guidelines, advice, information about the practical matter of CCA about the operation and activities of certifying Authorities. Above the task of e-filing, e-commerce, m-commerce, transactions, and a legal framework to mitigate and check cyber-crimes, these rules are essential. The law is very much necessary to support creating the chain of trust between the public and governance and developing the ICT sectors in Bangladesh. It is also essential to guarantee the legal security of documentary communications between partnerships and the government. It is declared by the law to be confidential, and confidentiality must be protected for transmission and communication networking.

- **The focus of the Act**

The short title of this law is the ‘Information and Communication Technology Act 2006. It applies to the whole of Bangladesh. In the definition of the law, there is the word “Digital

Signature”. Digital signature means data in an electronic form related to any other electronic data in an expressed or implied manner. Moreover, digital signature affixes the signatory uniquely capable of identifying the signatory and creating safely or using a means under the sole control of the signatory and related with the attached data to identify any alteration made in the data after that. Not all definitions but some critical explanations of the law we can discuss here. Because these definitions are significant in understanding the protocol followed in the enforcement of that particular law, the topic of Attribution, Acknowledgement, and Dispatch of Electronic Records in chapter III contains a description of the sub-topic of Attribution Acknowledgement of receipt, Time and place of dispatch of receipt of an electronic record Explanation. In Chapter IV, there is the topic of Secure Electronic Records and Digital Signatures. Here is the two-subject matter as a secure electronic record and Secure digital signature. In Chapter V, there is the topic of Controller and Certifying Authorities. In this chapter, there are 23 subsections. These are Certifying Authorities Controller and other officers, Function of the Controller, Recognition of foreign Certifying Authorities, Controller to act as a repository, License to issue Digital Signature Certificate, Application for license, Renewal of a license, Procedure for grant or rejection of license, Revocation and suspension of license, Notice of revocation or suspension of license, Power to delegate, Power to investigate contraventions, Access to computers and data, Certifying Authority to follow certain procedures, Certifying Authority to ensure compliance of the Act, rules, regulations, etc.; Display of license, Surrender of License, Disclosures, Issue of the certificate, Representations upon issuance of the certificate, Revocation of Digital Signature Certificate, Suspension of Digital Signature Certificate, Notice of revocation or suspension.

- **Digital Security and Penalty Guideline**

The title of Chapter VI is Duties of Subscribers. Here are four sub-sections. The topics are the Application of security procedure, Acceptance of Digital Signature Certificate, Presumption of represented information of obtaining Digital Signature Certificate, Control of safety measure of the subscriber. Chapter VII has the title of Breaching Rules, Prevention, Penalties ETC. Here are also the subtitles like – Power of Controller to give directions, Power of Controller to give directions in an emergency, Power to announce protected system, Penalty for failure to furnish document, return and report. There is also a Penalty for failure to file the return, information, book, etc., Penalty for failure to maintain books of accounts or record, Residuary penalty, Power

of Controller to issue prohibition of possible breaching of rules, Penalties. Chapter VIII there is the heading of Offences, Investigation, Adjudication, Penalties, etc.; in part 1 of the chapter, the subheading is Offences and Penalties. Under this subheading, there is the subtitle like- Penalty for damage to the computer, computer system, Punishment for tampering with computer source code. Again there is subheading on Punishment for hacking with a computer system, Punishment for publishing fake, obscene or defaming information in electronic form, Punishment for failure to surrender license, Punishment for failure to comply with the order, Punishment for failure to comply with an order made by the Controller emergency, Punishment for unauthorized access to the protected system, Punishment for misrepresentation and obscuring information, Punishment for disclosure of confidentiality and privacy, Punishment for publishing false Digital Signature Certificate, Punishment for publishing Digital Signature Certificate for a fraudulent purpose, etc., Punishment for using a computer for committing an offence, Offences committed by companies, etc. In part 2 of Chapter VIII, the main title is Establishment of Cyber Tribunal, Investigation of Offences, Adjudication, Appeal, etc. In this part, the subsections are Establishment of Cyber Tribunal, which include the Trial procedure, Application of Code of Criminal, Rules relating to bail, Time limit to deliver a verdict, Prescribed timeframe for dissolving cases by Cyber Tribunal, Prosecution of offence by Session Court, Prosecution procedure followed by the Session Court, Investigation of crime, etc. It also includes Confiscation, Penalties or confiscation, no bar against other punishments, Network service providers not being liable in some instances, Power of seizing or arrest in a public place, etc., Procedure of search, etc. In part – 3, the main title is the Establishment of Cyber Appellate Tribunal, etc. In this part, there is a subsection like the Establishment of Cyber Appellate Tribunal, Procedure, and powers of Cyber Appellate Tribunal, Appeal procedure in case of not establishing Cyber Appellate Tribunal.

- **Miscellaneous**

Chapter IX is the last chapter of this particular legislation. In this chapter, the heading is Miscellaneous. Under this title, there are six sub-sections. These are- Public servants, Protection of action in good faith, Augmented use of few definitions used in other relevant acts, Power of Government to make rules, Power of Controller to make regulations, Original script and English script. The Information and Communication Technology Act 2006 (ICT Act) has a questionable

part in it. It was analyzed in April 2016 in par with Article 19 of the Constitution of Bangladesh. Here experts find the questionable and problematic part of this Act. In this law, the core understandings of international human rights standards relating to the right to freedom of expression and privacy have been significantly hampered. The provision of the law is too rigid to protect people's privacy. Sometimes it may be too vague or unnecessarily criminalize and shows the highest investigatory powers for cybercrimes. The authority empowered to impose obligations to the service provider for cybercrimes may cause a particular challenge towards the effective realization of the right to freedom of expression. The safeguard of ordinary peoples fundamental rights is missing. Article 19 concludes that discrimination must be repealed or replaced with other standard ICT laws. Section 46 and 57 of the ICT Act should be analyzed more, and Section 63 should be specific and clear for its particular purpose. And for a public official, Section 63 should apply more carefully because of its vast effectiveness. The effectiveness should be limited, and the scope should be clarified. Otherwise, it may cause dissatisfaction. Data protection procedures should be properly reviewed and analyzed more specifically. The protection of personal data must be saved as per international law standards. Punishment for tampering with computer source code, under section 55(1), is imprisonment for a term which may extend to three years or with a fine which may extend to taka three lakhs. Sometimes both imprisonment and penalty may be imposed if the offence is grievous. Punishment for hacking with a computer system is described under subsection (1) of section 56. If anybody does wrongful loss or damage to anybody and destroys, deletes, or alters any information, it may consider hacking.

Moreover, damage through illegal access to any such computer, computer network, or any other electronic system which do not belong to him all this illegal activity shall be treated as a hacking offence. If hacking is considered, then punishment is under sub-section (1) of this section 56, which is imprisonment for a term not extend to ten years, or with a fine which may extend to taka one crore, or with both. Whoever commits the offence of publishing fake, obscene, or defaming information in the electronic form/ will be punished under subsection (1) of section 57. The prescribed punishment is imprisonment for ten years, and a fine may be imposed, which may extend to taka one crore. There is also the punishment for failure to surrender the license. If any Certifying Authority fails to surrender a license under section 34 of this Act, the person whose favour the license is issued, the person's failure shall be an offence. If the offence

happens, it will be punishable under sub-section (1) of section 58, which is imprisonment for a term not exceeding six months, or a fine which may extend to taka ten thousand, or with both. In the ICT Act, there is the provision for punishment under section 60.

If any person fails to comply with any order made under section 46, such activity will be regarded as an offence. The person who commits this offence under sub-section (1) of section 60 shall be punished with imprisonment for a term not exceeding five years or a fine up to one lac taka or both. Punishment for unauthorized access to protected systems is described in section 61. If any person who secures access or attempts to secure access to a protected system in contraventions to section 47 of this Act, this activity shall be regarded as an offence for which he will be punished under subsection (1) provision. Such person shall be punishable with imprisonment for a term which may extend to ten years, or with a fine which may extend to taka ten lakhs, or with both. In section 62, there is the description of punishment for misrepresentation and obscuring information. Whoever makes any misrepresentation or suppresses any material fact from the Controller or the Certifying Authority for obtaining any license or Digital Signature Certificate shall be regarded as an offence. If anyone commits such crime under sub-section (1) of this section 62 he shall be punished with imprisonment for a term which may extend up to two years, or a fine not exceeding taka ten thousand, or with both. In section 63, there is punishment for disclosure of confidentiality and privacy. If any electronic record, book, register, correspondence, information, document, or other material shall without the person's consent is disclosed, such activity shall be regarded as an offence. If anybody commits such an offence, there is punishment under sub-section (1) of 63. An accused person shall be punished with imprisonment for a term. It may extend up to two years or a fine up to two lac taka or both.

Punishment for publishing a false Digital Signature Certificate is stated in section 64. Whoever commits an offence under subsection (1) of section 64 shall be punished with imprisonment for a term which may extend up to two years or a fine not exceeding two lac taka or both. Punishment for publishing digital signature certificates for fraudulent purposes etc., is stated under section 65. If anybody knowingly creates and publishes or otherwise makes available a digital signature certificate for any fraudulent or unlawful purpose, such an act shall be considered an offence. If anybody commits that kind of offence, they will be punished under subsection (1) of section 65, and the punishment shall be imprisonment for a term which may extend to two years, or with a

fine which may extend to taka two lakhs, or with the both. Punishment for using a computer for committing an offence is stated in section 66. If anybody knowingly assists in committing crimes under this Act, using any computer, e-mail, or computer network, resource or system shall be regarded as an offence. In that case, the person who aids in committing any offence under subsection (1) of this section 66 shall be punishable with the punishment provided for the core offence. In section 67, there is the description of offences committed by companies etc. Here we see if a person commits an offence under this Act, then each officer or partner and staff of the company who is offender will be punished under the section.

- **Discussion:**

All the sections related to the offence and punishments of this Act are relevant for establishing human rights and controlling cybercrimes in society. The Act covers all the sides of the punishable factors of ICT activities. There is also a part dealing with miscellaneous issues under chapter IX. This enactment aims at fulfilling the demand of a digital country. By implementing and enforcing the law correctly, the government can regulate cybercrimes and other ancillary factors relating to cyber security. Until further amendment is coming, the law is rational and effective for controlling offences in the online environment. Only one drawback is there; by forcing the law without investigating properly, an innocent person may be a victim. On the other hand, human rights relating to privacy matters may also be disrupted.

National ICT Policy 2009

- **The rationale of the Policy**

The constitution of Bangladesh has focused on social equity to ensure justice through various measures. ICT is the best instrument to contribute to social justice. Even resources can be utilised appropriately with the framework of technology. The ICT policy, 2009, is a guiding framework for policymakers of the country to promote electronic service for the citizens. Even this policy is a guiding framework for private companies, IT sectors, businesses, and civil societies. Article 19 of the constitution of Bangladesh highlights Equality of opportunity, which includes-

(1) The State shall endeavour to ensure equality of opportunity to all citizens.

(2) The State shall adopt effective measures to remove social and economic inequality between man and man and ensure the equitable distribution of wealth among citizens and opportunities to attain a uniform level of economic development throughout the Republic.

- **Structure of the Policy:**

This policy has been designed, including a single vision, ten broader objectives, 56 strategic themes, and 306 action items. The action item has been classified into three sections like short term (18 months or less), mid-term (5 years or less), and long term (10 years or less).

- **Vision, Objective, Strategic Item, and Definition of ICT**

The ICT Policy 2009 has a vision that states the national aspirations concerning maximizing the use of ICTs for national development. The Policy has a set of related goals to be achieved to realize the vision. The objective includes social equity, productivity, integrity, education, and research, employment generation, strengthening exports, healthcare, universal access, support to ICT and environment, climate and disaster management. The strategic themes include a broad recommendation to guide the development and implementation of specific action items. The action item includes a particular implementation task under a strategic theme with clearly specified outcomes, time limits, and actors. By ICT, the Policy defines including all e-technologies used in creating, storing, processing, communicating, and disseminating information of all kinds.

- **Social Equity**

Under social equity, the policy focuses on the establishment of community e-centers, citizens help desk, ISP license for rural connectivity, expansion of NID platform, access to the application for public grants electronically, access to public services, mobile-enabled e-commerce, the establishment of women e-commerce platform, way of taking citizens' feedback through website and advocacy program for the awareness of the children.

- **Productivity**

the policy describes study for understanding the current status of ICT, encouraging maximum utilization of ICT related services, conducting media campaigns for raising social awareness,

organizing targeted workshops for local enterprises, implementation of ICT based SME model and e-commerce, the establishment of e-governance in all levels of government, organizing export fair and exhibitions, exploring PPP education, arranging internet connectivity at the village level, ensuring access to mobile banking for farmers and agro-businesses, setting mobile-based trade and business platform, introducing management information system at divisional level, implementing ICT act 2006 for e-business and e-transaction, giving training to farmers for technological adjustment and developing mobile-based trading and promoting capacity development program for the law enforcement agencies, establishment certifying authority, etc.

- **Integrity**

The ICT Policy 2009 has included series of actions to attain integrity. Those are the use of Bangla in all ICT activities, establishing a one-stop service center for citizens, access to online VAT registration, Use of ICT tools for intergovernmental connectivity, capacity improvement of the government officials for e-service delivery, access to all public information in online and introduction of ICT based monitoring system to control and check organizational progress.

- **Education and Research**

the policy has exceptional attention to initiating ICT professional skill assessment and enhancement program, better collaboration between the job market and academia, establishing ICT center for the excellence of teachers and students as well, promoting ICT literacy for primary and secondary students, emphasizing education on Mathematics, Science and English, ensuing ICT literacy in public service delivery and introduction of global standard ICT education at the tertiary level of education.

- **Employment Generation**

To promote employment generation, the National ICT Policy 2009 has taken strategies focusing on providing incentives for investment in the ICT industry, creation of development funds for ICT entrepreneurship, establishing an authority for ICT industry development, creating ICT Industrial Development Fund, establishing a separate accreditation body for getting approval, providing benefits to IT professionals, accessing to special amenities for local IT professionals, introducing ICT education at undergraduate level at district level college under National

University, enhancing enrollment of female in ICT, increasing female workforce in ICT at least 30% of total HR, providing training for specialized technologies in case of overseas job, giving ICT scholarship in education at the undergraduate level, ensuring the double number of sets at the CS/CSE/CE departments at all public universities, forecasting future ICT based human resource demands, enhancing institutional capacity to produce expert IT professionals, ensuring quality tertiary education by UGC, and creating ICT skilled workforce, etc.

- **Strengthening Exports**

The ICT policy 2009 emphasized various strategies for strengthening exports likely proper branding of ICT products of our country in the global market, participation in ICT fair, access to finance for software companies, formulating financial policy to promote ICT sector and to support various companies and industries with innovative ideas, , giving discounted rates for software industry, establishing software technology parks all over the country, offering incentives to Foreign Direct Investment, withdrawing VAT from various ICT services, Internet services and ICT related consulting services, establishing project management institute under Ministry of Science, Information, Communication and technology, developing senior management system in collaboration with the various business schools of home and abroad, giving collateral loan fund in software sector, ensuring proper implementation of Intellectual Property Rights laws, providing incentives to local computer hardware, establishing ICT-enabled infrastructure, providing incentives to exports for creating an industry-friendly environment, fostering investigation, innovation & research, etc.

- **Healthcare**

To promote the healthcare system, strategic actions under this policy need to be taken in many areas like improving the management of the healthcare system, creating a health network of all medical institutions, improving community awareness for health facilities, enhancing the national health service delivery system and ensuring quality assurance of health care services, etc.

- **Universal Access**

Strategic actions must be taken to extend universal connectivity to all citizens, establish submarine connectivity, extend Internet and IP telephony services, ensure affordable IP-based telecommunications, etc., to promote universal access.

- **Employment, Climate Change, and Disaster Management**

To promote Employment and the consequences of climate change, and disaster management, the ICT Policy 2009 focuses on promoting environment preservation strategy with the adoption of environment-friendly green technologies, ensuring environmental protection with the use of ICT tools, Introducing Digital warning and prediction systems during a disaster, ensuring safe disposal system with the use of technology and promoting better post-disaster monitoring system.

- **Support for ICTs**

The ICT policy 2009 emphasizes ensuring a cost-effective power development system, implementing a payment gateway system, providing online document sharing and transaction system, introducing government interoperability framework, building ICT-based infrastructure in educational institutions, decentralizing ICT growth, and accessing the reliable network system.

- **Observation of ICT Law:**

ICT policy 2002 was a basic framework to promote information and technology. According to ICT Act 2002, Information Communication Technology (ICT) incorporates data/information processing, transmission, and communications through different electronic devices like computers and telecommunication devices. This policy also emphasises Promoting and facilitating using ICT in all sectors of the economy to ensure transparency, accountability, good governance and efficiency, and effectiveness improvement in all aspects of governance mechanism. It has a concern to promote affordable internet access at the local government level through private investment. Information and Communication Technology Act, 2006 protects tangible property rights, including non-tangible rights of intellectual property, etc. It also includes digital security, digital signature, digital records of information, and punishment for various cases. It also emphasizes new issues like Intellectual Property Rights (IPR) in the information society, Electronic Signatures and documents, e-commerce, privacy, and data

protection, legal aspects involving intelligent agents and multi-agent systems, dispute resolution, and management in virtual environments, security and trust in open systems, virtual organizations, virtual and electronic institutions, social network and the web, cyber-crime. ICT Policy 2009 is a broad document to expand ICT functions. The policy outlined vision, objectives, goals, and strategic actions as well. The policy specifically described strategic actions in social equity, productivity, integrity, education and research, employment generation, strengthening exports, healthcare, universal access, support to ICT and environment, climate and disaster management. At the same time, it describes institutional responsibilities to implement strategic decisions.

Bangladesh has a long way to go for ensuring accountability, transparency, efficiency, and effectiveness. The primary purpose of the government is to provide public satisfaction by fast-tracking service delivery, and it can be ensured by digitalizing government service. To make the digitalization process inclusive phenomena, the government need to follow and implement ICT policy in light of the socio-economic reality. However, implementation of the policy is not a matter of overnight. Instead, it will take a significant proportion of the time. Once there was an initiative to form a task force mentioned in ICT Policy 2002, the effort did not come into reality.. Rather, it was a paper-based initiative. The government adopted the ICT act 2006 and ICT Policy 2009 to expand the use of Information and Technology in both public and private domains. The whole process is continuing with the alignment of vision, goals, objectives, strategic functions. The strategic decisions are mainly taken in various sectors for specific sectoral development. Even strategic decisions aligning with objectives were taken under various public institutions and authorities to implement government decisions. Nowadays, the government is working in the light of the ICT policy framework for the successful implementation of decisions.

Part B: Institutional Arrangements of ICT of the people's Republic of the Government of Bangladesh

There are the various organization of government that is closely intertwined with government service delivery. These organizations include the Ministry of Science and Technology, Directorate of ICT, Access to Information (A2I), Prime Minister Office, GoB, E-government Committee, Controller of Certifying Authority (CCA), Bangladesh Computer Council (BCC), National Data Center (NDC), Digital Security Agency, National Digital Security Council, Bangladesh Hi-Teck Park Authority, Bangladesh Telecommunication Regulatory Commission (BTRC), Bangladesh Telecommunications Company Ltd (BTCL), Bangladesh Communications Satellite Company Limited, Department of Telecommunications, Bangladesh Submarine Cable Company Limited (BSCCL), Mailing Operator and Courier Services Licensing Authority, National Disaster Management Information System (NDMIS), Bangladesh e-Government Computer Incident Response Team (BGD e-GOV CIRT), Bangladesh Cable Shilpa Limited (BCSL), Bangladesh Post Office (BPO), Teletalk Bangladesh Ltd. and Telephone Shilpa Sangstha Limited (TSS).

- **Ministry of Science and Technology**

The Ministry of Science, Information and Communication Technology was as 'Ministry of Science and Technology' till 2002. The main focus was to emphasize science and technology. As a result, the division was upgraded into the Ministry of Science and Technology on 4 December 2011. The Ministry of Science and Technology has the vision to build a 'Science-minded Nation'. It has a mission statement that includes supporting Bangladesh's socio-economic development through conducting research and development through the successful utilization of science and technology. The ministry has various functions, including the formulation of national policies.

It coordinates various initiatives of different ministries related to science and technology, implementing the National Council for Science and Technology (NCST).

It Provides grants for various institutions/agencies/non- government scientific organizations, etc., to promote science & technology, giving access to funding to promote science and technology. It is also liaising with various countries and international organizations to promote science and

technology, implementing multiple agreements related to science and technology, conducting activities related to atomic security and radiation control, setting up nuclear power plants, conducting research on new technology-based research on marine resources, chemical metrology, biology, electronics, and industry, etc. There are various organizations under the Ministry of Science and Technology, namely the Bangladesh Atomic Energy Commission, Bangladesh Council of Scientific and Industrial Research, Bangladesh National Scientific and Technical Documentation Center, National Museum of Science and Technology, Bangabandhu Sheikh Mujibur Rahman Novo Theatre, Bangladesh Atomic Energy Regulatory Authority, National Institute of Biotechnology, Bangladesh Oceanographic Research Institute (BORI), Nuclear Power Plant Company Bangladesh Limited and Bangabandhu Science and Technology Fellowship Trust. Besides, there is a various committee under the Ministry of Science and Technology including Parliament Committee, National Council for Science and Technology, Executive Committee National Council of Science and Technology (ECNCST), Rooppur National Committee, Rooppur Technical Committee, Rooppur Sub Committee, APA Committee, NTBB, NECB, Fellowship Committee, Innovation Team, Committee for Website Update and Beauty Enhancement (MOST 2020).

- **ICT Division and Directorate of ICT**

Intending to emphasise ICT, the Government decided in 2011 to upgrade the ICT division into the Ministry of Information and Communication Technology. It has a vision that aims at disseminating “People-friendly information technology in building Sonar Bangla.” The Directorate of ICT is a government organization. It is under the ICT division. The organization has field level officers named Assistant Programmers. They played a vital role in Districts and Upazilas to build digital Bangladesh. One Director-General is the main person in the Directorate of ICT. They took many projects for internet connectivity in a remote area of the country. They have an essential project named “establishment of computer and language training lab in educational institutions all over the country.” The Directorate has a vision that enables a better knowledge-based economy, ensuring good governance and sustained economic growth through e-services. The organisation's mission articulates providing robust and high-speed e-connectivity, better e-governance, generating skilled IT-based human resources, better cybersecurity, ensuring quality control, generation of new and innovative ideas, and implementation. The other missions

include building ICT infrastructure, sustainable maintenance support, and an attractive ICT career path, conducting research and development to acquire new technology. They are trying to connect ICT activity among all the Govt. offices and developing the infrastructure up to the root level. Their function is to constitute rules and regulations and research and standardization and interoperability of ICT equipment. They are also trying to build the capacity of IT within human resource development strategies (DOICT 2019)

- **Access to Information (A2I), Prime Minister Office, GoB**

Access to information is one of the globally recognized human rights recognized under Article 19 of the UN Declaration on Human Rights and the International Covenant on Civil and Political Rights (ICCPR). Article 19 states that everyone has the right to give their opinion and expression freely, which means providing an idea without any interference, etc. This article also emphasizes information and access to communication in any media (UDHR 1948). Article 22 of ICCPR states that everyone must have the right to freedom of association to establish trade unions jointly to protect their interest. In a democratic society, no one can impose restrictions to enjoy these privileges prescribed by the law. It also says that the public safety of the human being and the people's health safety, public order, etc., must have been protected (ICCPR 1976). The UNDP has the mandate to reduce poverty, mainly focusing on the fulfilment of Millennium Development Goals (MDGs). Besides, some global agendas include poverty reduction, democratic governance, and protection of human rights in society. So, UNDP established a framework strategically to support various countries through Access to Information projects so that democratic governance can be promoted. The primary purpose of this framework is to give support in the areas of access to information for ensuring people's participation, mainly focusing on the poorer section. Over the years, UNDP took various initiatives, projects, and programs for developing and transitional countries to access information. UNDP has a target to bring change through Access to Information. As one of the key actors in ensuring access to information, UNDP focuses on four areas: establishing relationships among government organizations, promoting the demand and supply of information from government, and better coordination and facilitating role. The last one is establishing democratic governance (UNDP, 2003).

In Bangladesh, A2I was established with the hand of UNDP, which is attached to the Prime Minister office, Government of Bangladesh (Minges et al. 2011). Access to Information is a

government program of the ICT division supported by the Cabinet Division (BTCA 2019). A2I is run through various partners, namely UNDP, World Wide Web Foundation, ILO, JAICA, New York Institute of Technology, The London School of Economics and Political Science, National Center for Information and technology, The Behavioral Insights Team, Copenhagen Census Center, and the National University of Singapore. The organization operates to promote innovations in public service areas so that the government can remain closer to its citizens. This citizen-centric approach is a significant concern of the government to reach Sustainable Development Goals (SDGs) targets. The digital services promoted and delivered by the A2I contributed to saving 1.92 billion days, 8.14 billion USD, and 1 billion visits for Bangladeshi Citizens. The A2I of Bangladesh aims to ensure easy, affordable, and reliable access to quality service for the citizens. To achieve the goal, A2I has three strategies. One is empowering government civil servants with relevant knowledge, expertise, and resources to generate ideas for better citizen-centric services. Another is innovatively establishing a one-stop service point to be available, accessible and affordable to citizens easily, and the other is encouraging non-governmental actors (like entrepreneurs, teachers, youth, etc.) with government actors. However, A2I has focused on the following areas like SDG Tracker, Service Innovation Fund, Innovation Culture in Civil Service, Empathy Journey, Simplification, Education Transformation, Disability Innovation Lab, Digital Financial Services, Sustainable Agriculture, Quality Health For All.

Due to A2I, more than one service is now being transformed in every public office every year. Over 70 million files are being deposited through the e-filing system of the government. More than 600 e-services had been added to the national Portal to ease the service delivery process. Nowadays, more than 1688 forms of 278 public offices can easily be accessed from 1 portal. Even 247+ projects (USD 4.1M) were awarded through the innovation fund. Government officials (33,450 public officials) received 2,175 training courses from various trainees. More than 5,000 government Facebook pages/groups have been created to scatter services to the door of citizens. Nowadays, 10,776+ government officials are engaged in Social Media. One portal housing website has been developed for all 46,00+ government offices. UDCs are one of the innovative initiatives of A2I. Now, 5,865+ UDCs are providing 400+ million services. In our country, these digital centers are situated within 4 km of every citizen. Once, citizens have to go 40km long to receive services from the district government. Time to receive services has come down by 65%, cost by 73%, and the number of visits by 51%. More than 369,000 teachers have

been added to the country's first and largest Teacher's Portal. A2I has some models to bring change, focusing on cultivating empathy, reducing TCV, simplifying through SPS, Service Innovation Fund, organizing Innovation Summits, and setting up service delivery platform, i.e. Services for All (A2I 2020). A2I has some successful innovations as follows:

Electronic Speaking System for People with Speech Impairments: Speak Up, Website Scanning and Security Solution, Capitation Grant Management System and Case Management System For Vulnerable Children, Bangladesh Travel Apps, Bangladesh Tourism Portal, Police Clearance Management System, E-Traffic Prosecution & Fine Payment System, Digitized Legal Decisions, Online General Diary (Lost & Found) Service, Online Land Development Tax Assessment and Collection System, Online Database of Vested Property, Automated Compensation Payment System for Land Acquisition, Simplification of Case Disposal Process In AC (Land) Office, Renewable Energy Producing Environmentally Friendly Biological Solar System, Algae As Renewable Fuel for Bangladesh, Saline Water Solar Filter, Connecting Bangladesh Help Line, Mobile App for Fighting Violence Against Women, Legal Support for Tortured Women and Children, Online Marriage Certification to Prevent Child Marriage, E-Commerce Platform for Women Entrepreneurs "E-Joyeeta", E-Learning Platform for Migrants Workers, Online Marketing of Commodities Produced by Cooperatives, Prototype Development for Bangla OCR Software, Magic Room Heater, Pother Majhei Pother Khoj – Free Advisory Service, Waterway Safety Device for General Public, Driver Behavior Monitoring System, SCIENCE IN THE GRIP – ICT and Science, FLIPPED CLASSROOM Technique, Simplification of Exam Services of Technical Education Board, ICT-Enabled Development Of Database for Creative Questions etc.(retrieved from <https://a2i.gov.bd/innovation-fund/>).

In 2015, the government of Bangladesh agreed through a memorandum of understanding between Access to Information (A2I) and Telenor Digital to use the company's digital technologies to promote social, economic, and human development in our country (Daily Star 2015). Microsoft Bangladesh had signed an MoU (Memorandum of Understanding) with A2I. Under this MoU, women entrepreneurs of UDCs will receive the opportunity for training on computers (software and hardware), which can be linked with UDCs (Daily Star 2016). In 2019, A2I under ICT Division and the support received from Cabinet Division, UNDP inaugurated eight digital public services to align with the government vision of Digital Bangladesh. Three

essential one-stop services were ekSheba, ekPay, and ekShop (Daily Star 2020). These three digital platforms enable citizens to get various benefits and pay multiple bills (Daily Star 2019). Three one-stop digitalmedia -- Eksheba, Ekpay, and Ekshop -- to allow people to get different government services and pay utility bills and fees were launched (Daily Star 2019).

In 2019, another MoU was signed between Sheba.XYZ and Access to Information (a2i) at the ICT Tower, Agargaon. The collaboration has brought more than 150 government services to the doorsteps of citizens by the Sheba.XYZ, more than 10,000 entrepreneurs, will be enabled to familiarized new working scopes in digital centers (Daily Star 2019). In 2020, Bangladesh Insurance Academy (BIA) had inaugurated an online training course for the graduate students of National University, where Access to Information (A2i) collaborated with BIA. The main objective was to help the students so that they can get jobs in this sector after completing their education (Daily Star 2020). The Bangladesh Telecommunication Regulatory Commission (BTRC), with the assistance of Access to Information(a2i), has given a direction to the mobile operators for sending an SMS to all users. The operators will provide information about the national monitoring center and the Access to Information (a2i) project under the ICT Division every six months. Users will get the opportunity to share info through those portals. (Daily Star 2020).

- **E-government Committee**

The honorable Prime Minister heads the proposed e-government committee. This committee is specialized in e-government and has the responsibility to take policies and various strategies. The committee includes Ministry, Cabinet Division, MOPTIT, MOF, MOP. Besides, there will be an E-government Promotion Agency that provides technical support. The Cabinet Division, MOPTIT, MOF, MOP are responsible for innovation, planning, budgeting, evaluation, and technological planning. However, the committee has a series of responsibilities, including designing e-government related policies and strategies, preparing a national-level plan for e-governance, assessing the e-government related various projects and programs. There will be an e-government promotion agency which has multiple functions including maintaining secretariate related task for the e-government committee, providing support developing e-government related policies, generating implementation plans of the e-governance program and projects, giving consent to various project management of services, providing technical support in multiple

projects, preparing the draft document of e-governance master plan, conducting research and technological innovation with the use of existing or new technology, providing support to develop a strategic plan for each ministry and supporting to the promotion of e-government. The Cabinet Division is responsible for keeping various e-government related policies, preparing nation plans and policy for e-government, conducting a survey for each Ministry's e-government activities, and reviewing and monitoring each ministry's annual performance agreement. The MOPTIT is responsible for providing technical support to e-government initiatives and strategies, establishing e-government business, assisting in ICT related capacity building, developing new architecture, etc. Ministry of Planning is responsible for reviewing the ministerial plan of every ministry, designing the methodology of project management of every church, analyzing the national statistical data, and measuring & evaluating outcomes of various e-government projects. The Ministry of Finance has the responsibility to review the budgetary allocation of the plan of each ministry. The Ministry of Public Administration is responsible for regulating laws, rules, regulations, research innovation, etc. (ICT Division, 2019, pp.185-186).

- **Controller of Certifying Authority (CCA)**

CCA was formed under the ICT (Amended) Act,2006, in 2011 under the Information and Communication Technology Division. The full name of CCA is the office of the Controller of Certifying Authority. One of the essential tasks of CCA is to provide a digital signature for all Government officers. They are the licensing Authority to certify electronic signatures. They are trying to make paperless Government correspondence, electronic document signing, device and server signing, preventing cybercrimes, etc. The Controller is the head of the organization. CCA's three objectives are helping to secure cyberspace in the country, running a critical public infrastructure (PKI) program within the legal framework, and building public awareness in secure e-transaction. The organization's vision is to ensure secure cyberspace, and the organization's mission is to provide a safe transition of information and eradicate cyber-crime by implementing a digital signature certificate. There are two laws had taken by CCA; one is – Information and Communication Technology (Amended) Act,2006, and the other are Information Technology (Certifying Authorities) Rule, 2010. Another law will be formed on ICT, the drafting of the digital security act, 2015 (CCA 2020).

- **Bangladesh Computer Council (BCC)**

Bangladesh Computer Council is a statutory organization. The organization has played a vital role in the ICT sector and is doing its task of formulating national ICT strategy and policy. BCC is also arranging many kinds of training courses, seminars, workshops for human resource development. The organization is working under the Ministry of Posts Telecommunications and Information Technology and is providing support for ICT related activities. They have established the Union Information and Service Center throughout the country and are developing ICT infrastructure to the root level. They have found the National Data Center. It is the TIER -3 certified Data Center of the Bangladesh Government. Through the Center, they are hosting all government websites. The sites are significant for the people of the country for collecting public information. They are also maintaining email services to the offices. They have substantial activities for connecting the peoples and inter official activities. Their web application services also helping general citizens of the country. BCC has taken so many projects and programs to create standard specifications of ICT tasks that are essential to meet the needs of modern times. They are also promoting professional efficiency in computer education and target to create an international IT market in the country (Askari et al. 2015; Bangladesh Awami League 2016; Sohel 2016; BCC 2020; Islam 2020; Uptime Institute 2020; Khan 2004).

- **National Data Center (NDC)**

National Data Center provides various services, which can be categorized into three core sections. One is Infrastructure as a Service (IaaS), another is Platform as a Service (PaaS), and the other is Software as a Service (SaaS). The Bangladesh Computer Council manages this organization to fulfil the target of digital Bangladesh. It was established in 2010. The mission of the National Data Center is to provide IT services at the State level and infrastructure opportunities for Bangladesh through Digitalization. The vision of the National Data Center highlights becoming a leading data center in Asia, setting IT service, maintaining global standards and promoting digital communities (NDC 2020). In 2009, National Data Center-1 was deployed in Bangladesh. The National Data Center has been announced into the Tier-3 facility after its expansion in 2015. However, 90% of public websites and nearly 40,000 mails are hosted

in the national data center (NDC). This center helps to maximize the usage of ICT resources, virtualization of the server, backup opportunity. The contribution of NDC is that the stakeholders can choose particular services on demand. In addition, another National Data Center-2 was established in Kaliakair Hi-Tech Park, Dhaka Division. The Chinese government funded this data center. The National Data Center-2 offers Tier-4 requirements in terms of service capacity. In a word, the National Data Center-2 will operate as a backup for the National Data Center-1 (ICT Division. 2019, pp.43)

- **Digital Security Agency**

The Digital Security Agency was established on December 5 2018, under the Division of Information and Communication Technology following Article 5 of the Digital Security Act-2018. The agency has the responsibility to prevent cybercrimes using various technologies and digital mechanisms. The head office of the Digital Security Agency is located in Dhaka. The agency has branch offices that can be set in any location according to the government's will. The Digital Security Agency has the power to run one or more digital forensic labs. These digital forensic labs will be under the control of the Director-General (ICT Division. 2019, pp.31; DSA 2020).

- **National Digital Security Council**

The honourable Prime Minister heads the National Digital Security Council. The organization operates to discuss various issues related to digital security. The National Digital Security Council was established with Article 12 of the Digital Security Act of 2018. Bangladesh's government has perceived the relative importance of the Security Council to keep pace with the globally competitive world. To establish a digital Bangladesh, such kind of organization can play a vital role to coordinate among various government institutions, providing necessary directions to the government and taking steps for digital security (ICT Division. 2019, pp.31)

- **Bangladesh Hi-Teck Park Authority**

Bangladesh Hi-Tech Park authority is the only organization of the Government that operates a technology business park. They are trying to facilitate and promote ICT business under the Information and Communication Technology Division. The organization was formed in 2010.

Their projects include Bangabandhu Hi-Tech City (Kaliakoir Hi-tech Park Gazipur), ‘Sheikh Hasina Software Technology park Jessore’, Sylhet project, Silicon City, Rajshahi, Sheikh Kamal IT Training and Incubation Center, IT/Hi-Tech Park at District Level (12 District) project, Janata Tower SIP, etc. The vision of the Bangladesh Hi-Tech Park Authority is to extend the IT/Hi-tech industry. The Mission of the Authority is to establish a software technology park, IT park, IT village, IT hub, and to establish research and development centers for ICT (GoB 2014; Rosario 2015; Bonny & Haque 2017; Islam 2018; Halder 2019; BHTPA 2020; DRI 2020).

- **Bangladesh Telecommunication Regulatory Commission (BTRC)**

BTRC is a regulatory body founded under Bangladesh Telecommunication Act, 2001, and started its function on 31 January 2002. The Commission regulates all the telecommunications related activities of the country. It is responsible for wire, cellular, satellite, and cable-related matters of telecommunications. The primary activities of the commission are issuance and renewal of licenses, expansion of 3G services, international voice call, international internet Gateway (IIG), expansion of optical fibre networks, interactive GIS map, quality of service, IP telephony, curbing illegal call termination, national frequency allocation plan (NFAP), aeronautical radio service, maritime radio service, monitoring of radio spectrum, etc. BTRC is trying to introduce a modern telecommunication system and to accommodate modern information technology. They have other activities like formulation of operating procedure for the telecommunication sector (guideline, directive, etc.), international payment and recharge service, call Centers based information or helpline, activities related to national security and maintaining law and order, movements of the BD- CSIRT, activities related to public awareness, environment-friendly telecommunication systems, complaint management taskforce, international SIM/RUIM/ Data Card. Moreover, BTRC always tries to collect information about telecommunication and the internet inside and outside of the country and take necessary action or put recommendations to the Government as they think appropriate (BTRC 2007; BTRC 2008; Hussain 2011; Hussain 2012; BTRC 2011; BTRC 2012; BTRC 2012; Annual Report 2014-15; Annual Report 2015-16; BTRC 2017 and BTRC 2018).

- **Bangladesh Telecommunications Company Ltd (BTCL)**

Bangladesh Telegraph and Telephone Board (BTTB) was converted into a public limited company titled Bangladesh Telecommunication Company Limited on 01 July 2008 following the Bangladesh Telegraph and Telecommunication Board (Amendment) Ordinance, 2008. The company gives all the telecommunication services to the citizens of the country. Voice call service provides fixed copper line telephone service (PSTN), Intra and Inter operator voice calls, international voice calls and fax, various supplementary services (call forwarding, hotline, conference call), Red Telephone service, interconnection exchange (ICX), and international Gateway (IGW). They have internet connectivity and related services like voice, video, and upto 20 Mbps internet connection at subscriber level through Gigabit Passive Optical Network (GPON), IP transit service through international internet gateway (IIG), web hosting, DNS parking, and bd domain name registration. There Data communication like digital data node (DDN), optical fibre-based MPLS service is good. Moreover, there domestic and international transmission systems named nationwide optical fibre microwave-based backhaul transmission, copper optical fibre-based local loop, national telecommunication transmission network (NTTN), international private leased circuit (IPLC) connectivity, international terrestrial cable service, and satellite link services. They also provide infrastructure services like colocation, equipment space. Power connection and tower, dark fibre, and fibre duct (Annual Report 2013-14; Begum et al. 2014; UNESCAP 2017; Alam 2018; BTCL 2019; Mahmud 2019; Hussain 2020).

- **Bangladesh Communications Satellite Company Limited**

The Bangladesh Communications Satellite Company Limited was formed in 2017. Bangabandhu Satellite – 1 was launched by this company in space on 12 May 2018. The company is directed by the board where the Secretary of Telecommunications Division is the Chairman, and there is a Managing Director who is the chief executive of the company. The company looks after all the related matter of satellite. They supervise the ground station of Gazipur and Cox's Bazar. The launching of this satellite has brought opportunities for our country to enter into a new era of Information Technology. Now Bangladesh is a prestigious member of the satellite club. It is not a dream; within a few years, Bangladesh will launch 2nd satellite in space (Daily Star 2018; Daily Star 2018; Karim et al. 2018; The Statesman 2018; Bangladesh Science Foundation 2019).

- **Department of Telecommunications**

On 08 September 2016, the activities of the Department of Telecommunication have started the journey. The temporary office has set up at the Tejgaon Telecommunication Training Center of BTCL. When Bangladesh Telegraph and Telecom Board (BTTB) was abolished, it was transferred to Bangladesh Telecommunication Company Limited (BTCL) in 2008, and then it was essential to form a department. As a result, the Bangladesh government formed the Department of Telecommunications. The organisation's principal activities are to regularize the administrative work of the employees, such as posting, promotion, deputation, post-retirement leave, pension, etc. Another important task of this agency is to formulate 'Appointment Rules' for the Department and to provide assistance to other organizations relating to the telecom sector. The number of posts for the department as per the organogram is 238 (Annual Report 2014-15; BTCL; 2020; DOT 2019).

- **Bangladesh Submarine Cable Company Limited (BSCCL)**

Bangladesh Submarine Cable Company was founded in 2008 and started its activity on 01 July 2008 as a Limited company to operate as the international submarine cable operator and international internet gateway (IIG) of Bangladesh. The company provide telecom service.

It connects long-haul communication within the country and with the rest of the world. The company is a party in SMW-4 and SMW-5 consortiums and connects people to the information superhighway through a submarine cable. Now, faster and easy exchange of international voice and data is going on through the undersea cable, and the reduction of the bandwidth price is possible. The company is earning lots of revenue and is trying to increase bandwidth use (IDLC 2013; UNESCAP 2014; Annual report 2017-18; Jahangir 2019; Akash 2020).

- **Mailing Operator and Courier Services Licensing Authority**

It is purely a Government organization. The Authority has formed in 2013 this company arerunning under the 'Mailing Operator and Courier Service Rules, 2013'. It regulates the operation of the Courier Service business. It also issues licenses for courier services operated under sections 4 and 58 of the Post Office Act, 1998. The Authority also collects the license fees, compensations fees, and other fees determined by the authority, and they also choose the way of

a collection of the costs. The Authority also finds the field of conducting the business, ensure quality service, and also monitor the industry. Sometimes they formulate necessary policies concerned with this. They also act or work as an arbitrator or mediator to resolve a dispute that arises. When they monitor the business, they also address the complaint of the customers. They take necessary action step by step with proper supervision so that Mailing operators and courier service providers conform to the government's specific guidelines. They also give appropriate advice to follow the Universal Postal Union guidelines and other International rules and regulations. Now a day, they are aiming to establish digital technology training and research facilities (The Daily Observer 2014, Hossain 2017; Acharjee 2019).

- **National Disaster Management Information System (NDMIS)**

The National Disaster Management Information System was implemented by The Ministry of Disaster Management and Relief. On 29th April 1991, Bangladesh faced a cyclone in hit Chittagong, Cox's Bazar, Barisal, Noakhali, Patuakhali, Barguna, and Khulna tidal bore 5-8-meter-high with the speed of wind 240 km/hour and 150,000 have died people. After that severe devastation, the Bangladesh government declared the National Plan for Disaster Management 2010-2015. However, the National Disaster Management Information System (NDMIS) includes a globally integrated observation system. This system helps to collect data from 17 satellites, hundreds of ocean buoys, thousands of aircraft and ships, and around 10,000 land-based stations. The NDMIS includes a Global Data Processing and Forecasting System with a network of surface and telecommunication through satellite. It also consists of the Global Data Processing and Forecasting System, covering around 50 global and regional meteorological centers. The NDMIS system also allows cyclone shelter database information and early warning systems through mobile broadcasting (ICT Division, 2019, pp.52-53).

- **Bangladesh e-Government Computer Incident Response Team (BGD e-GOV CIRT)**

The Bangladesh Computer Council operates Bangladesh e-Government Computer Incident Response Team through a project initiative. It was established to maintain cybersecurity incidents within the e-government network. The team monitors operate within the web so that the security of the National Data Center can be ensured to eliminate disruptions, cyber-attack, and so on. In the National Data Center, around 200 government agencies' websites are hosted.

Various e-government applications (like Online Birth and Death Registration, National E-Service System, Online Services of Department of Printing and Publications, etc.) are also hosted in the National Data Center. The BGD e-GOV CIRT has the responsibility to monitor the security issues of all the government institutions. These government institutions use NDC infrastructure to host IT resources and facilities as well. If the capability of the BGD e-GOV CIRT gets maturity, the mandate of the organization will be extended into de facto National CIRT. In the future, the organization will have the capacity to play a pivotal role in ensuring the national cyber defence of governmental organizations (ICT Division, 2019, pp.53; BGD E-GOV CIRT 2020).

- **Bangladesh Cable Shilpa Limited (BCSL)**

The company has a cable manufacturer industry situated in Khulna, which was formed in 1967. There is a board of directors. Secretary, Posts, and Telecommunications Division are the Chairman of the Board, and there are other five members on the board (<http://www.bcsl.gov.bd/>). The company produces copper cable and optical fibre cables of high quality. The company has taken the initiative for product diversification.

This company supplied the ‘‘ optical fibre cable network development in Upazila level’s’’, project of BTCL. There is a demand for optical fibre cable for many public and private projects, and the company is trying to fulfil the request simultaneously (Bashar 2002; UNESCAP 2017; Moniruzzaman 2018; Partha et al. 2019; Chakma 2020).

- **Bangladesh Post Office (BPO)**

Bangladesh Post Office is a government organization that started its journey in 1898 in British ruled India. It is a department of public services. It attempts at ensuring reliable services to the people throughout the country. They have two types of mail services; one is domestic, and another is international. The express services are EMS service, GEP, and EPP service. They also have E-services like the e- post and foreign money order, Electronic Money Transfer Service (EMTS). They also provide financial services like- life insurance (postal life insurance, endowment assurance, endow assurance for marriage and education), savings bank, saving certificates, money order, postal order, electronic money transfer service, postal cash card, parcel (domestic and international). Their main tasks are collection, transportation, and delivery of

postal objects (domestic and international). They are trying to upgrade their services by updating and revisiting their traditional postal system. They are now adopting modern ICT based services by using information and communication technology. There are 04 GPO, 22 'A Grade' head post office, 45 'B Grade' head post office, 421 Upazilas post office, 923 Departmental Sub post office, 11 Departmental branch post office, 8460 Extra Departmental post office. Total the number of the post office is 9886. Notable activities of the department of posts are electronic/mobile money transfer service, postal cash card, automation of the process of the department of posts, information technology-based rural post office, e- postcenter for the rural community, strengthening the postal transport system, IPS light service, release of commemorative stamps, etc.(Bold 2011; Khanam 2015; Diagnostic 2016; Debnath 2018; MTBiz 2018; New Age 2018; UNB 2018; Daily Sun 2019; Directorate of Posts 2020; Jiniya n.d.).

- **Teletalk Bangladesh Ltd**

Teletalk Bangladesh Limited is a government-owned company. It is the only Bangladeshi operator that provides quality telecom services to the citizens, insides of the country, and outside of the country. Teletalk is the only mobile operator where technical and engineering sources are 100% Bangladeshi. The company is trying to create a source of revenue; it is also trying to ensure fair competition, good services by expanding its network. Teletalk is working for e-Governance through exchanging information on Agriculture, Education, Health, and others. They are doing e registration and publishing results of different kinds of public examinations. One board of directors regulates the company. Secretary, Posts and Telecommunications Division is the Chairman of the Board, and there are other eight members, including the managing director of the company and company Secretary. The company also attends corporate social responsibility like- service SIM for freedom fighters, shortcode SMS helpline for children with disability/diseases, children's art initiative, blanket distribution program, medical treatment for Bushra, blood donation program, etc. (Islam 2010; Rahman 2010; Jamil 2011; Uddin 2012; Alam 2013; Mozumdar 2013; Teletalk 2020).

- **Telephone Shilpa Sangstha Limited (TSS)**

Telephone Industries Corporation was a joint venture company between Government and M/S Siemens AG in 1967. In 1973 there was again a new contact between Government and Simens

AG, and the organization was transformed and named Telephone Shilpa Sangstha Limited (TSS). In 2008 Siemens AG transferred all shares of their part to Bangladesh Government to the Posts and Telecommunications Ministry. Then in 2010, TSS was registered as the Registrar of Joint Stock of Companies and come out as a newly formed public company. It is now working as an industry and manufactures or assemble for telephone sets, Laptops, PABX, Fax machine, DP/CT box, multi-functional digital electric meter, battery, charger, and other accessories.(Kabir 2012; Bangladesh Directory 2018).

At the end of the discussion, the implementation of digitalization is a comprehensive process. Several organizations are associated with the proper implementation of Information and Communication technology. To implement the ICT laws successfully, government agencies should maintain coordinated efforts among the public agencies and authorities. In a word, the government needs to play a pivotal role in promoting technology in the service delivery process.

Chapter Five: Union Digital Center

Part A: Global Experience

One-stop services, a globally renowned and accepted mechanism, has taken hold in recent years. Most of the services have been providing under one roof through one-stop shops globally so that citizens can avail of various services staying at a single storehouse without facing any discrimination in terms of service delivery. More than 80 countries have started one-stop shops or single window services, or community-based services through government portals and websites to ease the favour by reducing corruption and hassles (Hasanuzzaman 2019). It is a primary contact point for getting different public services and information smoothly and conveniently. This mechanism has been operated by government intervention or local government authority or collaboration with the private entrepreneur. This chapter initially highlights the idea and concept of the One-Stop-Shop. It also describes the importance of the One-Stop-Shop (OSS) model and the advantages and the purpose of using such models. After that, the chapter focuses on One Stop Shop or single gateway service, project initiatives, various innovative programs in countries including Denmark, Norway, Georgia, Brazil, Tajikistan, Vietnam, Laos, China, Mongolia, Myanmar, Bhutan, Sri Lanka, Pakistan, India, and Bangladesh.

5.1 One-Stop-Shop (OSS):

The one-stopshop is mainly a citizen-centric model to deliver service to citizens straightforwardly (Carrasco andFetherston 2014; Dudley et al. 2015; Scholta et al. 2017; Kamaruddin and Md Noor 2017).The citizen-centric model mainly emphasizes the desire or need for what they are looking for. So, it is a challenge for the public sector to adequately meet the citizens' demands (Undheim and Blakemore 2007; UN 2008; Dudley et al. 2015; Giesbrecht et al. 2016; Hart &Mullahi 2017; A2I 2020). In that case, the emergence of the model OSS has been popular throughout the world. Nowadays, both developing and developed nations are accustomed to the concept in case service delivery where services (information/transaction, etc.) are provided from a single window or access point (Wimmer&Tambouris, 2002; Contiades 2007; Böhmer 2010; Onyango 2017). The OSS model has some key principles, including listing the opinion of the customers, enabling various channels for service, breaking down the silos, taking continuous feedback from the citizens, and setting customer-friendly standards (PWC

2012, pp 5-9; Männik 2017; Umarova et al. 2017; Čeko 2018). The OSS model also requires some key elements like speed, engagement, responsiveness, value, integration, choice, and experience.

Speed means a definite timeframe to deliver service to customers' hands to ensure prompt service. It is the responsibility of agents to take necessary actions to provide services expeditiously. The engagement primarily includes how to deliver particular services to citizens so that it seems the service is provided in a citizen-friendly way. By responsive it means that using such an intelligent mechanism and strategy for quick service delivery. Besides, the agency is responsible for taking necessary steps if any change is required. The value represents a voice of message to citizens, including the cost-effectiveness of the service delivery. Value is the customer outcome. The integration refers to an accurate window of service delivery so that no 'wrong door' strategy is presented before the customers, which can demotivate customers for particular services. The choice indicates various means of service delivery so that the customers' preferences do not get restricted. The experience means the personalization of services to ensure that customers have the best experience of particular services. In Hong Kong, citizens access more than 200 government websites and 1200 e-government services from a single website, "HKGov.org". Similar evidence is found in the UK, where citizens can access the portal "direct.gov.uk" for getting any information and transaction-related services. In New York, NY 311, a one-stopshop allows for dialling on a single number for the citizens on a 24/7 basis. To make the OSS model successful in public service delivery, the public sector organization should seriously emphasize four areas. The one ensures visible leadership with a high level of dedication and commitment to set goals and successfully implement the plans. Another is setting standards and yardsticks to measure the services to perceive whether they are on the right track to meet their targeted goals. The other is completing the service delivery process flexibly within a definite time and fixed method. Finally, the important thing is setting up a legal framework so that every task befalls within the premise of the regulatory framework. (PWC 2012, pp 5-9).

5.2 OSS (One Stop Shop) Models

The OSS has various available models worldwide. These models have a prime concern about the integration of the service. The models of OSS have structural, administrative, and social dimensions. However, the structural size includes designing, integrating services from one

department to another, selecting various services, geographical distribution, etc. The structural extent allows both vertical and horizontal integration of the government structures. Vertical integration focuses on integrating services at multiple levels of the government.

On the other hand, horizontal integration focuses on integrating the services from the government point. The administrative dimension is based on bureaucratic functions for service delivery. Social justice includes ensuring social justice through one-stop service centers (Wimmer 2002; Oliveira et al. 2009; Kovács and György 2014; Vashakidze 2014; Login 2016, p.12; Scharle 2015; Farias et al. 2017; UN 2017; Gashi and Krasniqi 2019).

There are varying reasons for the establishment of a One-Stop-Shop for better service delivery to citizens. The One-Stop-Shop must fulfil the social needs and commitment through service delivery to the public. But there have indeed been some difficulties including lack of available better internet access, geographical barriers etc. But, to deliver services through the OSS model, such obstacles cannot improve service delivery. So, it is a preferable means of service delivery to citizens from one window (Jaeger and Thompson 2003; European Commission 2015; Hasan 2015; OECD 2016; Hauser 2017; OECD 2017; Vilfan et al. 2018). Besides, there are two critical reasons for the establishment of the e-Stop Shop. The one is to ensure easy access to service delivery for the welfare of the citizens. It is an efficient tool to deliver services incorporation to various departments of the government. The government departments also operate for social welfare by providing services to the excluded, less privileged, minority, and poorer sections of society. In this way, all kinds of people can easily avail the opportunity to get access to various government services. The OSS model helps to promote inter-organizational coordination among different government departments. This coordination establishes a better linkage among the department for effective performance in service delivery to citizens (Wattenhall et al. 1997; UAE Government 2013; Flumian 2018; OECD, n.d.). There are various advantages of one-stop shops, including helping to make an easy life for citizens, enabling public services conveniently, reduction of cost in service delivery, ensuring need-based services, minimizing government cost through sharing responsibilities, creating synergies among government departments, flexibility in service delivery, etc. (Tambouris 2001; Brydon et al. 2007; Scholta 2017).

One-Stop-Shop is indeed a proactive e-government service for all. It includes web access and mobile usage opportunity so that citizens can get service-related notifications. Besides,

establishing a call center is essential for providing support to citizens since citizens won't send any request for service delivery without it. Government civil servants assist in successful outcomes in service delivery through OSS (OECD 1999-2000; Lambrou 2003; Linders et al. 2015).

Three technological enablers are highly required for ensuring proactive service delivery from e-stop shops. The first thing is establishing mature e-government with a series of components like a robust database system, proper data preservation, user authenticity and security, etc. Another essential thing is an innovative technology with mobile phone access to get their services anytime, and similar service providers can easily pick the recipients. The other thing is securing extensive analytics capability (Linders et al., 2015). The agent-oriented model is another approach of a one-stopshop. This model is helpful to ensure proactive e-government services to citizens. This model is based on designing services for citizens in such a way so that citizens' needs can be fulfilled. There will be a central component in this model for proactive services. Finally, the models suggest analyzing for understanding citizens' position (Bhusate et al. 2005; Mellouli and Bousalam 2009; Sterling and Taveter 2009; Garoui et al. 2014; Sirendi and Taveter 2016)

For delivering e-government services to citizens, both reactive and proactive recommenders can be used. The reactive recommender of e-government service delivery is based on setting some questions along with suggested answers so that recipients can get the relevant answer related to specific services. The proactive recommender suggests benefits in such a way where citizens will be notified in their social media profile if any changes take place (De Meo et al. 2005; Guo and Lu 2007; Shambour and Lu 2011; Ayachi et al. 2016; Cortés-Cediel et al. 2017; Cantador et al. 2018).

The government may use various types of recommender machinery for personalizing the services. This personalization helps to create a provision of services or products related information for the individuals. The government can establish a personalized portal for offering various services to decide what could be relevant. Thus, various choices will be generated for the citizens in service delivery (Mulvenna et al., 2000; Pieterse et al., 2007).

A stage model of a one-stopshop includes a sequence of transformations from one stage to another. It has three-stage like one-stop-shop, Limited no-stop-shop and No-stop-shop. The

significant change happens from a limited no-stop-shop to a No-stop-shop location. The model presents that data are collected at the initial stage in government service delivery and then appropriately stored, and finally, these data are used for service delivery (Scholta et al., 2017, pp.4).

- **Denmark:**

Denmark is one of the successful examples of one-stop-shop services. These services are provided from a single-window at various municipal job centers. Besides, citizens have the opportunity to receive information regarding employment and social benefits from a single window. This co-habitation model of service delivery is now being applied in the 77 municipal one-stop-shop centers. Service-related responsibilities are shared between the national and municipal authorities (Askim et al. 2011; Bosse et al. 2015; KMD 2016; Login 2016; Pfeil et al. 2017)

- **Norway:**

Norway is another example of success in establishing one-stop-shop centers. To ensure better services through OSS, the government integrated three departments that focus on welfare activities- national insurance, employment, and municipal social services. This merger can help to ensure administrative efficiency, user-friendly service delivery, and participatory development. The NAV (New Employment and Welfare Administration) in Norway started to operate in 2005. Besides, local level services are being now provided through one-Stop Shops (Christensen &Lægreid 2010; Christensen et al. 2014; Løegreid and Rykkja 2014; European Commission. 2015;Login 2016).

- **Georgia:**

Georgia initiated one-stop-shop centers to deliver various public services with the reform initiative in 2004 in public administration. The government delivered services using two ways; one is Public Service Halls (Justice House), and the other is Community Centers. The Public Service Hall is designated to provide about 300 services nationwide, expressly provided by the Ministry of Justice, Government of Georgia. The Public Service Hall (PSH) offers various services, including birth certificates, death certificates, marriage certificates, land registration, real estate ownership, document legislation, passport service, etc. Community centers deliver

services at the municipal level and operate their function through an agreement between local authorities and the Public Service Development Agency (PSDA). Employees of the municipal authority serve as operators in various centers. The center operator can accept an application for a passport, id card, civil registration, migration application, application on amnesty, residence registration, and so on. Besides, operators can issue various documents related to services provided by PSDA (World Bank 2012; Vashakidze 2014; Open Government Partnership 2014-15; Login 2016; Vashakidze 2016; IGPDE 2017-18; Ministry of Justice of Georgia, N.d).

- **Brazil:**

Poupatempo, the second-best program, is a prominent citizen service center program in most states of Brazil. The Poupatempo reform initiative was executed initially in 1997, which primely addressed service delivery problems s and hassles; lack of adequate information, long lines in service delivery, unequal access to services, cost of services, delays in service delivery, etc. Various services were provided from a single location like ID card, criminal records, employment booklets, social assistance (related to unemployment and housing programs), printing, banking services, photocopying access, web and telephone platform (Rosenn, 1971; DaMatta, 1984; Castor, 2002; Grisham, 2005; Fredriksson, 2014; Login 2016; Fredriksson, A. 2019).

- **Tajikistan:**

In Tajikistan, the government took decisions to deliver quick services from government departments and authorities. In that case, the chiefs of the departments decide how to provide speedy services once a week. For citizens, various services were provided, including land registration, civil registration, passport service, education service, social safety net service, and health service, even though one-stop centers provide numerous information related to information on government services (OECD 2012; UN WOMEN 2012; Login 2016; OECD 2018; Nazrievn.d.).

- **Viet Nam:**

A one-stop shop is an important mechanism and vital part of the service delivery system in Vietnam. One-Stop-Shop (OSS) includes various administrative services providing centers to deliver service to citizens from a single location. OSS administrative service covers land registration, notarization, business registration, construction permits, cultural activities license,

etc. The inception of One-Stop-Shop ensured better services in rural provinces. Even this practice of OSS has contributed to improving the status of accountability, transparency, better accessibility, efficiency, and effectiveness. For effective operation of OSS, some essential elements are found as imperative; likely access to central government platform, advising customers in eight types of administrative procedures, receiving and forwarding clients' requests, and attached documents in 39 types of procedures from government Window Officers (SDC 2010; Swiss Humanitarian Aid, 2003; UN 2012; Login 2016; Blunt 2017 et al.).

- **Laos:**

Laos government took initiatives for administrative decentralization. However, One Door Services (ODSs) are found as an element of administrative reform for decentralization. Due to budgetary constraints and scarcity of resources, the government eagerly attempted to cost-effective service delivery from one center for the citizens. Laos adopted the model of One Stop Shop model of Vietnam in 1996. In 2006, the government decided to establish ODSs, which was basically under the reform program 'Governance and Public Administration Reform (GPAR) program' managed by the Ministry of Home Affairs. In Laos, there are a total of 17 ODSs throughout the country at different levels. The program has the primary target, which is enhancing the government's responsiveness in local service delivery. ODSs were established at provincial and district administration buildings. ODSs have their employees served as the staff who the caretaker administration appoints. ODSs have the right to determine the fee of the services, among which 70% of the prices are given to the central government, and 30% is restored for the development of ODSs. The government has a steering committee headed by the district chief/province governor to monitor its functions. However, ODSs are supposed to deliver services of various ministries, including the Ministry of Home Affairs, Ministry of Information, Culture and Tourism, Ministry of Public Works and Transport, Ministry of Natural Resources and Environment, and sometimes others (McCarty et al. 2007; UNDP 2007; Login 2016; OECD 2017).

- **China:**

In China, electronic-based public service eased access to open benefits of citizens, the employees' effectiveness, and the responsiveness of the citizens and government. Besides, the government decided to promote innovation in the public sector and enhance the government's

capability through electronic service delivery. Now, 95.77% of government portals deliver appropriate navigation information to citizens and business people (Hu et al., 2008).

- **Mongolia:**

Mongolia started OSS in 2007, supported by the Swiss Agency for Development and Cooperation (SDC) but finally implemented in practice nationwide in 2013. Under the OSS, citizens frequently receive various services at the provincial and district levels, including banking and notary services, social protection, employment counselling, etc. In addition, citizens get other services like land management, civil registration, social insurance, employment information, bank, and notary services. One of the essential outcomes of OSS in Mongolia is that more than two-thirds of visitors expecting to receive benefits are women. Mongolia has 194 OSS operating at the provincial and district levels, including the capital (Login 2016). To mobilize doorstep services, the government has also inaugurated a mobile OSS van. In Mongolia, more than 60% of the population uses the OSS. The performance of OSS is improving day by day. In 2016, the satisfaction rate was 85% regarding OSS services (Turner 2012; ILO 2016; ILO 2020).

- **Myanmar:**

Myanmar government established 72 OSS in 2012-13 across the country to deliver services efficiently (UNDP 2012). One-Stop shops have definite services outlined along with identifying the process of application, timeliness of service delivery, and cost of particular service. Various departments are responsible for providing government and other services, including Departments of Development Committees, Electricity Supply Services, Police, Immigration, Public Health, Social Welfare, Fire Services, Internal Revenue, General Administration Department, Agriculture, Land Management, and Statistics. Each OSS has a desk including two staff who play roles as members and stay for three months on that basis of rotation (Login 2016; Myanmar National Portal 2020).

- **Bhutan:**

In Bhutan, One Stop Shop was set up with support from the Swiss Agency for Development and Cooperation (SDC), the United Nations agencies, and the Government of India. OSS operated in Bhutan as a solution to promote remote services at the grassroots level. Under this OSS model, citizens received benefits from one roof. The journey of service delivery using ICT was a reform initiative under the Integrated Public Service Delivery Systems. The government, with the help

of Bhutan Post, established community centers to promote local service delivery. All government initiatives to deliver services at the local level received support and assistance from the Local Governance Support Program (ADB 2014; GNHC 2014). Under OSS and CC, various services were provided with the supervision of specific departments. Department of Civil Registration & Census provides birth registration, death registration and family/household information.

Department of Forests & Park Services, MoAF delivers different services like rural timber permits, flagpoles, firewood, education services, security clearance services, audit, labour, and employment services. At the same time, Citizens get a total of 29 services that are related to the micro trade service of the Ministry of Economic Affairs to include printing, photocopying, scanning, and sale of legal stamps and vouchers for recharge, etc. The community centers have set up 205 gewogs, including better connectivity though some gewogs have the inferior status of network connection (UNDP 2007; Login 2016).

- **Pakistan:**

The idea of OSS started in Pakistan with experimentation through the establishment of Citizen Facilitation Centers/e-khidmat centers. Initially, such a center was inaugurated in Rawalpindi. After that, Lahore and Sargodha established an e-khidmat center for better service delivery. Thus, one e-khidmat center was established in each division of the province. This center provides various services from a single window, including birth certificate, death certificate, marriage certificate, divorce registration, domicile registration, fine traffic collection, issuance of weapon license, issuance of route 11 permit, motor vehicle registration, computerized National Identity card (CNIC), passport issuance and services of the local and district administrations. In the Panjab Province, the e-payment platform (e-sahulat) has been attached to e-khidmat center to pay various bills (Login 2016).

- **Sri Lanka:**

In Sri Lanka, the government established nearly 600 *Nenasalas* as OSS in rural and semi-urban areas to ensure better access to e-services. In this model, the government emphasized skill development to promote service delivery from one shop center. According to the survey, 41 percent of *Nenasala* users got a job based on their computer skills and aptitudes (Karunasena et al. 2011). Sri Lanka adopted four models of *Nenasalas*. One is the Entrepreneurial/ commercial model, which delivers IT-related information. The main target of this center is that it has a target

to ensure social & economic development and peacebuilding throughout society. However, these centers operate in the local government units to reach the poorest section of the country, especially in the south and northeast corner. Another community model was adopted to provide some free services and cross-subsidized paid services for the local people. This model has a target to scatter IT facilities among the communities. The other objective is distance and e-Learnioperate functions to keep connectivity between national and global distance through video conferencing, multi-media computer labs, etc. The last model is Tsunami camp *Nenasalas* which are established in tsunami-affected regions. This entity operates to provide various information regarding tsunami and give access to health and education (Login 2016).

- **India**

Various state governments have taken the myriad initiative to promote service delivery through a one-stop service center in India. A wide range of OSS models is found in the context of India. The government established 100,000 Common Service Centers (CSCs), and another 150,000 CSCs are being established to deliver services in all *Gram panchayat*. However, CSCs run by the Department of Electronics and Information Technology, Government of India provide various services, including electronic access of forms to apply, e-District services, the printing of e-Aadhaar card, agriculture services, educational services, rural banking, insurance service, passport services, digital life certificate and various commercial services like printing, photocopying and internet browsing. An OSS facility MeeSeva was inaugurated in Andhra Pradesh & Telangana to provide 348 public services of 34 departments. Besides, 7000 MeeSeva Kiosks are being operated in the two States. Similar MeeSeva, the Sakala initiative has been adopted, covering 478 government services. In Madhya Pradesh, 334 Lok SewaKendras were established to scatter 126 services (Login 2016). E-Mitra initiative based on PPP model was taken by Rajasthan where private partner takes money for the particular service likely utility bills, tax payment, ticket reservation, passport application, birth & death registration and so on (Das and Chandrashekhar, no date). In Kerala, OSS initiatives were taken in the name of Akshaya centers to deliver various services like identity cards, health schemes, passport applications, ticket reservations, and so on (Nissar 2014). Andha Pradesh Government established e-Seva centers in over 200 villages and towns to deliver services at a low cost. In Mandal headquarters, the government established 46 bigger e-Seva centers led by women, where around 2000 women are working. The e-village project was adopted with sound Wi-Fi

connectivity at Guntur District to promote service delivery. Under this project, e-village websites have been developed. It has included a bank loan management system, ration cards system, land record management system, and *Pattadar* passbooks system. Delhi Government has installed the *Jeevan* project, including 104 services and 23 departments under this project. Initially, the government targeted 45 services, which will be provided by the Computerized Citizen Service Centers or portals with the online gateway. A BOT model of PPP follows this project. Citizens can easily pay their utility bills, licensing opportunities, receiving various certificates, and so on in a single platform. In Karnataka province, 800 service centers were established to provide various services to citizens like various certificates, pension-related activities, social security payments, special Bhoomi packages (Kaveri and Bhoomi). These services can be easily accessed at one-stop shops. Under the Bhoomi, citizens received computerized services and facilities, including 20 million land records of 6.7 million farmers through a self-sustaining business model. Karnataka government took another online treasury project named Khajane. At the panchayat level, the government took the Gram Swaraj project for improving service delivery and better management of public resources. In India, the Karnataka government and NIC Karnataka applied e-governance successfully in the Bhoomi Project that had been an example of a replication model for other states. Biometric authentication was used to scrutinize a foolproof system (Kumarwad and kumbhar, 2016). The Haryana government took initiatives to promote education services. This initiative had come into effect when the government started the “Integrated Workflow System for paperless admission” and online-offline counselling, including undergraduate, postgraduate, and diploma education. The Pradesh received the major award in 2007-08 in the ICT Based Best Practice category to recognise the initiative. To promote agriculture services, Mustard Procurement Management System was developed as well. Kerala government took initiatives on e-payment facilities on a pilot basis through rural ICT access point Akshaya. The pilot programs offered 25 types of services from one point. PEARL was inaugurated for the registration of laws and documents as well. To reduce poverty, the government took a community-based initiative known as Araya. The government took the Gyabdoot project, which is community-owned. Under this project, the entire expenditure was for the network facility given by the Panchayats. The state or national government had not undergone any financial burden to implement the project successfully. Maharashtra took various e-governance projects at the local level, including ‘Warana Wired Village’, Koshvahini, e-

treasury package, and e-registration package. The government adopted “Government Servants Regulation of Transfers and Prevention of Delay in Discharge of Official Duties Act, 2006” to render public services within seven days and clearance of file within 45 days. Rajasthan government using the PPP model, established 500 e-Mitra service centers in 31 districts to provide various services, including certificates, bill payments, ration cards, transport ticket opportunities. Besides, SARATHI (Stamp and Registration Automation with Technology and Information) was inaugurated to finish e-registration by one hour. In Tamil Nadu state, the government took e-governance projects in a self-sustaining model. SARI project covers applications for government loan opportunities, email opening, providing birth & death certificates, pension, computer education, and so on. In West Bengal, the government opened gram panchayat accounts in 400 panchayats, a GIS-based information system. Besides, telemedicine projects were taken to provide better health services to local people. The government has established 6,697 citizen service centers for various services in West Bengal. Similar initiatives were taken in Tripura through establishing E-Suvidha Kendra ‘service facilitation centers’ to provide 22 citizen services. In Uttar Pradesh, the government inaugurated various e-services at the local level through a project basis which includes tender service, land records, employment service, e-registration, court information system, etc. This opportunity was expanded into 21 districts with over 398 kiosks (Bokad et al., 2013).

Bangladesh Experience

5.3 Digital Center

it is needed to look back to the events of Egypt in 2005 to understand the idea of digital centers in the context of Bangladesh. At that time, the one-stopshop was established at the office of the Mayor of Alexandria (Egypt) office, where the United Nations Development Programme (UNDP), Egypt, heavily supported implementing the initiative successfully. The initiative's primary purpose was to ensure adequate public or private services available for the citizens without any hassle, obstacle, and disturbance. The innovative idea was to try to attract citizens to get engaged in technology-based service delivery. During the initial stage, the concept of a one-stopshop was comprehensive in terms of service delivery. An operator generally sat down with a computer to provide services to citizens. The service delivery process was not a completely

automated process where the operator had to send a request to the computer. After that, citizens had to fill up the printed form. The Mayor had the ultimate responsibility to coordinate the service delivery process to get the service conveniently. Though there had not been available technology like today, the authority tried its best to deliver services to citizens. The Access to Information (a2i) Programme of the Prime Minister's Office of Bangladesh initiated the experiment of the concept of one-stop shops from the context of Egypt where the United Nations Development Program (UNDP) and the United States Agency for International Development (USAID) greatly assisted. The Bangladesh government established 13,000 digital centers known as flagship One Stop Shop (OSS) throughout the country, not to need more than 2km to access any service. These Flagship One Stop Shop (OSS) is helpful both in urban and rural areas. These one-stop information and service centers at the grass-root level are known today as Union Digital Centers (UDCs). The UDCs have ensured services for all irrespective of colour, caste, gender, literacy, etc. These Union Digital Centers (UDCs) have been established about 4km from the average citizens' homes in rural areas. The entrepreneurs are crucial agents of service delivery, either public or private service, using modern technology for all the citizens. After that, Bangladesh has shared the success story of Union Digital Centers (UDCs) in Maldives, Bhutan, Fiji, and Uganda (UNDP 2010; Hasnayan 2016; CRI 2017; UN South-South Cooperation 2017, Mamun and Begum 2018; Programming Division 2018; Sharfaraz and Khan 2018; Rahman et al. 2019). At that time, the government of Bangladesh had a plan to establish over 5,000 one-stop information and service centers for delivering better services for the citizens at the local level (Siddiquee 2016; Umarova et al. 2017, pp.26, UNESCAP 2018; ICT Division 2019; Faroqi et al. 2020).

5.4 Community Information Centers (CICs) in Bangladesh

Community Information Centers started its journey in 1958 by setting the 1st center at Dhaka Ahsania Mission (DAM), where citizens availed access to community services. At the initial stage, this center was run by supplying newspapers, magazines, posters, books, etc. Dhaka Ahsania Mission received internet access for the first time in 1996. Most of the CICs focused on community development, women's advancement, access to the internet to rural dwellers, and so on (Islam and, 2010). Grameenphone, the largest telecommunication operator in Bangladesh, contributed significantly to provide internal facilities to 23 million subscribers through CICs. A

Grameenphone CIS is well equipped, having a computer, a printer, a scanner, a webcam, modem access for the internet. Local entrepreneurs help to run CICs self-sufficiently as a small business. Considering social responsibility, Grameenphone believes in sustainable development especially supporting the empowerment, health, and education sector (Grameenphone, 2007). The Pilot Project on CIC was conducted in 2006 with over 500 CICs running around 450 Upazilas. After that, the government took a short-term plan to establish CICs in all 462 Upazilas. Grameenphone cooperated with the government to ensure that each CIC can support nearby four villages (Hoque and Mahiuddin, 2013).

5.5 Union Information and Service Centers (UISCs)

The establishment of the Union Information and Service Center (UISC) was a motive of the government to promote service delivery at the Macro level (i.e. national), Meso level (i.e. organizational), and Micro level (i.e. individual). The Union Information and Service Center (UISC) model was a unique one because it promoted a public-private partnership model, whereas many innovative ideas were implemented with donor funds and assistance. The UISC model was the initiation of the Digital Bangladesh initiative that was started in 2010. At that time, 50 % of women entrepreneurs engaged in the Union Information and Service Center (UISC). A similar innovative partnership program was held with government agencies including Cabinet Division, Bangladesh Computer Council; non-governmental organizations like Dhaka Ahsania Mission, etc. banking institutions (BRAC Bank Limited, One Bank Limited, Dutch Bangla Bank Limited, Mercantile Bank, Trust Bank); life insurance companies; telecommunication companies including Banglalink and Robi Axiata Limited, etc. (Hoque and Sorwar 2015).

5.6 Union Digital Centers (UDCs)

To promote service, the government of Bangladesh has established digital centers at various levels, including City Corporation Digital Center at City corporation level, Paurashava Digital Center at Paurashava level and Union digital center at union level.

No		
1	Total Service Point of CDC, PDC, and UDC	5275
2	Nature of the services	106
3	Number of services provided (till 21 August 2020)	223198518

4	Total earning of entrepreneurs (till 21 August 2020)	2,261,299,729/=
5	Number of male entrepreneurs	5379
6	Number of female entrepreneurs	3161

Figure 5.1 Information about Union Digital Center (UDC) (retrieved from <http://dcms.e-service.gov.bd/>)

Since their inauguration, Union Digital Centers has been running under the umbrella to ensure public service in the rural area. It is being considered a one-stop service center operating under the supervision of a private entrepreneur called Union Digital Center Entrepreneur. 4547 Union Digital Centers are working all over Bangladesh (Mamun 2018). Local people are getting their services on time at a low cost and in a short time (A2I 2018). At the same time, it also reduces the number of visits to get the desired services (Das 2019).

Union Digital center or Union information service center has been working locally to ensure different local people services electronically. (Bakshi and Rahman 2016). Bangladesh Awami League came into power in 2009. In the election manifesto, they promised to ensure a Digital Bangladesh, while 12th December was declared national ICT Day (Daily Star 2019). To transform a stereotype government into a digital government, the government has established Union Information Center, further transformed into Union Digital Center in 551 Union Parishad all over Bangladesh. (Das 2019). 3.9 million people get services from the union digital center while 940120 are women. People have received birth and death certificates within 8 hours and 5 hours, respectively

<i>The existing number of UDCs</i>	4554+
<i>Number of public and private services</i>	150+
<i>Number of services provided by UDCs</i>	367+ million services provided
<i>Earned by the Entrepreneurs</i>	\$32.95 million
<i>Number of Birth registration from UDCs</i>	75 Million
<i>Online registration of prospective migrant workers</i>	2.1 Million+
<i>Citizens in M-banking</i>	4 Million +
<i>Citizens covered by life insurance</i>	0.29 Million +

Figure 5.2 UDC at a glance (A2I 2018, p.04)

5.7 Management functions of UDCs:

The Japan International Cooperation Agency supported the Participatory Rural Development Project (PRDP), where the emphasis was primarily given to establishing the Development Coordination Committee (UDCC) in each Union Parishads. The Union Development Coordination Committee (UDCC) is responsible for ensuring better service delivery and engaging in development related activities (JAICA 2015). Similarly, UDCs are run by a management committee comprising 7-9 members chaired by the Chairman of Union Parishad. The UP secretary facilitates all types of institutional and other supports to the committee. There must have one-third of women members in the committee. This committee remains in operation for two years to carry out a few responsibilities, including the selection of local entrepreneurs, buying various service-related equipment, assisting entrepreneurs in discharging their functions, organizing a meeting each month to review activities of UDCs, selecting the rate of charges for services (Ahsan et al. 2010).

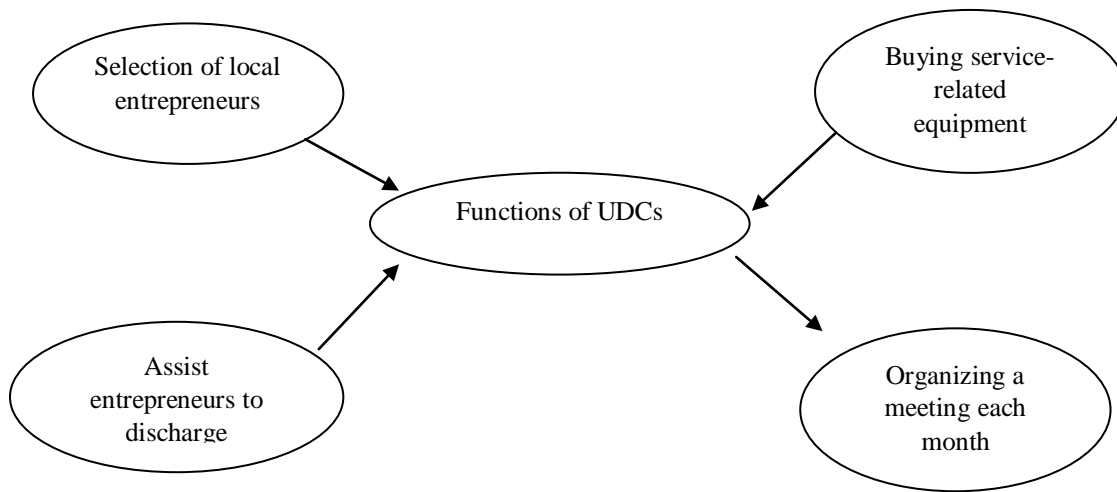


Figure 5.3 Management Functions of Union Digital Centers

5.8 Services offered by UDCs:

UDC offers government, commercial and information services for community people so that people can get various services like Online Birth and Death Registration, Different types of government forms, Government circulars and notices, Online university admission, Public Examination results, Population census data entry, Citizenship certificate, Land registration certificate, etc. e-Banking, life insurance, English learning, Computer training, Internet browsing, E-mail, Printing, Scanning, education and health info, etc. (Islam and Islam, 2018, p.96).

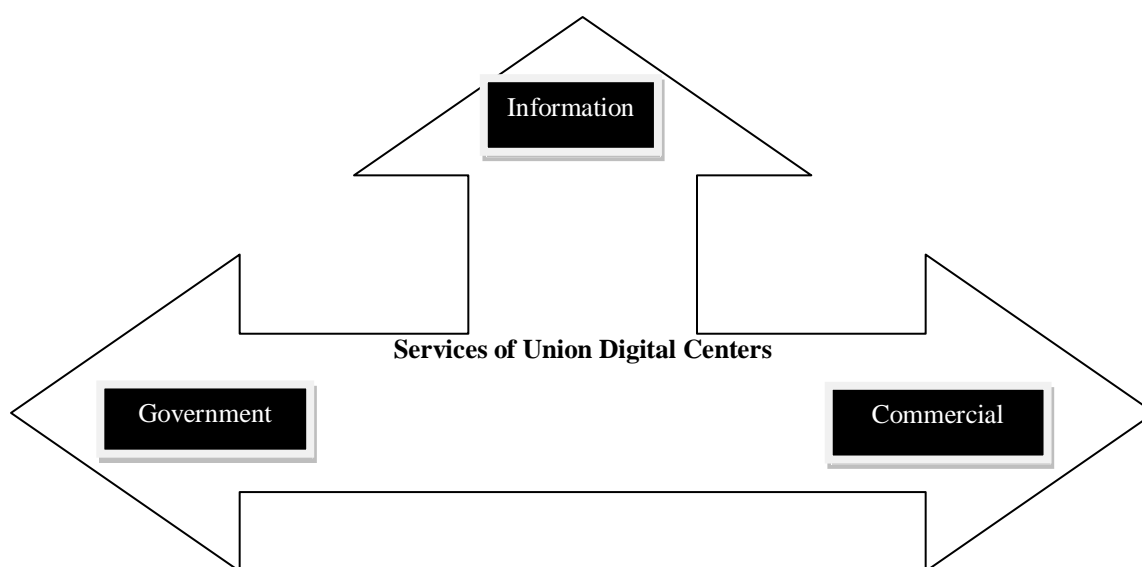


Table 5.1 List of UDC Services

No	Services	Specific Services
1	Government services	<ol style="list-style-type: none"> 1. Online Birth and Death Registration (form fill in) 2. Different types of government forms 3. Government circulars and notices 4. Online university admission 5. Public Examination results 6. Population census data entry 7. Citizenship certificate 8. Land registration certificate etc.
2	Commercial Services	<ol style="list-style-type: none"> 1. e-Banking, life insurance 2. English learning 3. Computer training 4. Internet browsing 5. E-mail 6. Printing

		<ul style="list-style-type: none"> 7. Scanning 8. Compose 9. Photocopy 10. Laminating 11. Data entry 12. Photography 13. Phone call 14. Flexi load 15. Mobile ringtone download 16. Video show 17. Video conference 18. Projector rent 19. Application form fill-up for Passport 20. Visa processing 21. Height and weight measurement 22. Blood pressure measurement etc.
3	Information Services	<ul style="list-style-type: none"> 1. Agriculture 2. Health 3. Education 4. Law and Human Rights 5. Tourism 6. Environment and Disaster Management 7. Science and Technology 8. Industry and Commerce 9. Employment

Chapter Six Analysis and Findings

This chapter has discussed the significant findings of the study, which has been divided into three parts. The first part discusses the effectiveness of e-services delivered by Union Digital Centers, including policy and legal Framework of Union Digital Centers, structure and management system of UDCs, nature of service delivery, and its impact on service recipients and environmental dynamics its impact on UDCs' services.

The second part of the analysis incorporates the potentials and challenges of Union Digital Centers from the context of e-service delivery in Bangladesh. And lastly, part three has evaluated the overall result and findings.

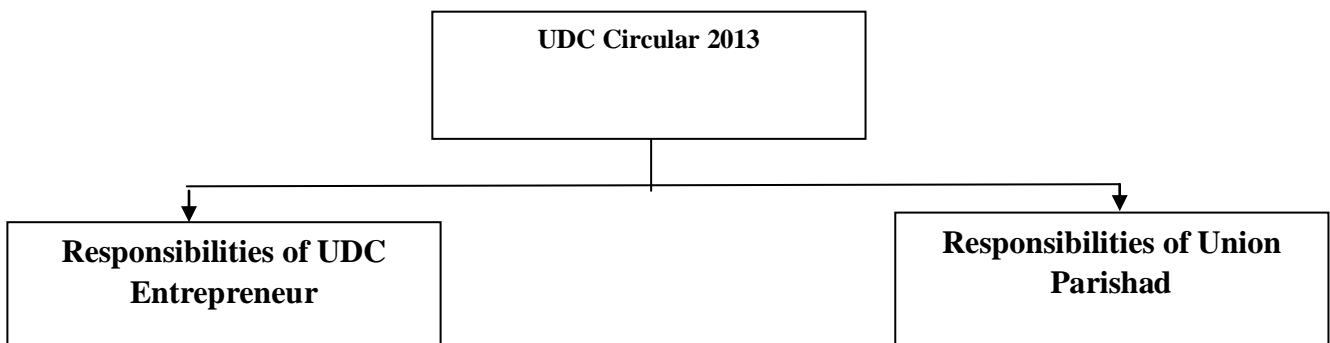
Part A: Effectiveness of E-services Delivered by Union Digital Centers:

6.1 Policy and Legal Framework of Union Digital Centers (UDCs)

UDCs have been established under the PPP model in the context of Bangladesh (Hasanuzzaman 2019). The government of Bangladesh publicized a UDC circular in 2013 regarding the roles, responsibilities of UDCs, and the part of Union Parishad regarding services of UDCs.

6.1.1 Overview of UDC Circular:

UDCs have been established under the PPP model in the context of Bangladesh (Hasanuzzaman 2019). The government of Bangladesh publicized a circular in 2013 regarding the roles, responsibilities of UDCs, and the part of Union Parishad regarding services of UDCs.



6.1.2 Responsibilities of UDC Entrepreneur:

According to UDC Circular (2013), UDC entrepreneur is obliged to ensure public and private services dedicated to the local people. If adequate services are not found at UDCs, entrepreneurs will take the necessary steps to ensure that citizens are getting the required services. Sometimes, citizens may have complaints or suggestions regarding the benefits of UDC. In that case, they can put their comment, views, and opinions before the UP Chairman so that the concerned issues are resolved. To disseminate the UDC service delivery, entrepreneurs will organize various programs/campaign/yard settings at the market, educational institutions, etc., using a multimedia projector, laptop, etc. UP chairman, UP secretary, and Upazila Nirbahi Officer will implement an entrepreneur's publicization strategy. UDC entrepreneurs will manage everything of the UDCs. To complete his daily functions, they can appoint additional entrepreneurs and render water/electricity/internet bills to the authority on time. If the entrepreneurs face problems conducting their duties, they will initially inform the UP chairman and the UNO to dissolve the issue. If the problem does not get resolved, the Deputy Commissioner of the respective district will intervene to resolve the issue. Entrepreneurs are obliged to upload their daily reports using the link uams.e-service.gov.bd. They need to present a progress report of UDCs in the UDC management committee meeting. UP chairman is responsible for placing the report of UDCs in the monthly coordination meeting of the UNO.

6.1.3 Responsibilities of Union Parishad:

UNO will guide and ensure the active performance of UDC under their control.

Union Parishad provides a room without rent for UDC entrepreneurs through an agreement. Union Parishad has a UDC management committee chaired by UP chairman and UP secretary as a member secretary. This committee will organize one meeting every month. This committee will operate to strengthen the functions of UDCs. Union Parishad has the responsibility to cooperate, assist, and support the activities of UDCs. Besides, the Union Parishad will ensure alternative entrepreneurs so that local people can get seamless services.

Though UDCs have been running for a long, still this large institution has no specific legal and policy level framework relating to recruitment, selection and training. As a result, the operational procedure is not well defined. At the same time, the UDC entrepreneur becomes confused about the specific boundaries' activities. One of the UDC entrepreneurs alleged that

“Although we do not have any legal framework, we have a valid and formal identity card provided by the senior secretary of local government division, and the secretary signed the ID card. We demand that the central government institutionalize our post as we all are working for a long time. At present, they have sued a case file to recruit in the Union Parishad office by using this Identity Card.”

Since there is no legal framework, it is clear that there is no job security for the UDC entrepreneur. It is dependent on the personal whim of the union Parishad chairman. One of the UDC entrepreneurs anonymously responded that

“We always feel very scared regarding our jobs because our job depends on the union chairman. I have to follow the instruction and orders of the chairman of the union. I did not get any formal recruitment or appointment letter. It is like a contract. Even this contract is nothing to me. Because this contract does not ensure my job security”.to analyze this statement, 82% respondent (UDC entrepreneurs) felt that do not have job security. Only, for this reason, I could not work correctly for these reasons.

On the contrary, the concerned chairman was questioned regarding this allegation. He claimed that

He alleged that he never uses their power to pressure them or threaten them to lose their job if they do not follow their instruction and do not fulfil an order. Even I used to support him. We can see their workstation. How beautiful their workplace! They have everything.”

On the contrary, the unnamed entrepreneur alleged that-

“This office has been furnished and decorated by my financing. I did not get any support from the union chairman.”

However, to improve governance, the government should emphasize promoting the service delivery process for all citizens. To fulfil the purpose of government, a one-stop center has been prevalent as an innovative idea to widen, speeding-up, and advancing service delivery. Various countries are following this approach to promote e-service delivery. In Bangladesh, Union Digital Center has been operating nationwide to promote e-service at the grassroots level, especially for rural people. Citizens can conveniently avail access of various services at a minimum cost.

6.2 The institutional capability of UDCs to provide e-services

6.2.1 Logistics at UDCs provided by Government

Union Digital center is an entity having with a lot of o logistics like a chair, table, computer, internet, printer, scanner, projector, and photocopy machine. All this equipment is equally important to deliver services to citizens. Table 1.1 shows the existing list of equipment at Union Digital Centers.

Table 6.1 List of logistics at Union Digital center

<i>Name of the Union</i>	<i>Chair & Table</i>	<i>Photocopy machine</i>	<i>Projector</i>	<i>Computer</i>	<i>Scanner</i>	<i>Internet</i>	<i>Printer</i>
<i>Barikandi</i>	✓	X	X	✓	X	✓	✓
<i>Salimgang</i>	✓	X	X	✓	X	✓	✓
<i>Tejkhali</i>	✓	X	X	✓	X	✓	✓
<i>Dorikandi</i>	✓	X	X	✓	X	✓	✓
<i>Garidah</i>	✓	X	X	✓	X	✓	✓
<i>khamarkandi</i>	✓	X	X	✓	X	✓	✓
<i>Lahiripara</i>	✓	X	✓	✓	✓	✓	✓
<i>Fapor</i>	✓	✓	✓	✓	✓	✓	✓
<i>Kandigaon</i>	✓	X	X	✓	X	✓	✓
<i>Mollargaon</i>	✓	X	X	✓	X	✓	✓
<i>Baraikandi</i>	✓	X	X	✓	X	✓	✓
<i>Tuker Bazar</i>	✓	X	X	✓	X	✓	✓
<i>Teghoria</i>	✓	X	✓	✓	✓	✓	✓
<i>Konda</i>	✓	X	X	✓	✓	✓	✓
<i>Six no Birulia</i>	✓	X	X	✓	✓	✓	✓
<i>Seven no savar</i>	✓	X	✓	✓	✓	✓	✓

The table shows that almost all the unions do not have a photocopy machine. In the case of the availability of a scanner, most of the UDCs does not have one. One of the UDC entrepreneurs claimed that-

“I got photocopy machine and scanner since Union digital center was established. Apart from that, the rest of the equipment is available at union digital centers. This equipment does not meet the adequate quality in delivering services.”

6.2.2 Level of Internet Speed

Internet speed is essential to deliver better government, commercial, and information services. During the survey, UDC entrepreneurs were asked whether they have good internet or not. 68.8% of entrepreneurs said that they have adequate internet speed.

Table 6.2 Status of adequate internet speed

	<i>Number of respondents</i>	<i>Percentage</i>
Yes	11	68.8%
No	05	31.3%
Total	16	100%

After that, UDC entrepreneurs opined regarding internet speed while delivering services. Three-fourths of entrepreneurs experienced poor level internet speed. Only 6.3% opined that they had had high-speed internet service.

Table 6.3 Level of internet speed

	<i>Number of respondents</i>	<i>Percentage</i>
Very poor	1	6.3%
Poor	11	68.8%
Moderate	2	12.5%
Strong	1	6.3%
Very strong	1	6.3%
Total	16	100.0%

Some UDC entrepreneurs alleged that-

“Union Parishads do not have their internet access. Some UDCs have internet access, but the network is deplorable. Even some entrepreneurs managed internet services at their expense to deliver uninterrupted services. Sometimes, they use mobile data for keeping adequate internet speed.”

However, internet speed significantly varies from one union to another (see Table 1.4). In most cases, internet speed is moderate, and no Union Parishad has abysmal internet speed. Some UPs have a poor network. Only Fapor and Lahiripara union have very high internet speed. Entrepreneur of Fapor and Lahiripara opined that-

“We have very internet speed that helps to expedite service delivery process at UDC. The Chairman of Union Parishad helped to make sure that the UDC has adequate internet access.”

Table 6.4 Union specific Internet Speed

	<i>Very Good</i>	<i>Good</i>	<i>Moderate</i>	<i>Poor</i>	<i>Very Poor</i>
<i>Barikandi</i>	--	--	--	✓	--
<i>Salimang</i>	--	✓	--	--	--
<i>Tejkhali</i>	--	--	✓	--	--
<i>Dorikandi</i>	--	--	✓	--	--
<i>Garidah</i>	--	--	--	✓	--
<i>khamarkandi</i>	--	--	✓	--	--
<i>Lahiripara</i>	✓	--	--	--	--
<i>Fapor</i>	✓	--	--	--	--
<i>Kandigaon</i>	--	--	--	✓	--
<i>Mollargaon</i>	--	✓	--	--	--
<i>Baraikandi</i>	--	--	--	✓	--
<i>Tuker Bazar</i>	--	✓	--	--	--
<i>Teghoria</i>	--	✓	--	--	--
<i>Konda</i>	--	--	✓	--	--
<i>Six no Birulia</i>	--	✓	--	--	--
<i>Seven no savar</i>	--	✓	--	--	--

The amount of internet cost is significant to know whether it is feasible or not. More than one and a half of UDC entrepreneurs do not require internet cost support. More than two-fourths of respondents have to pay 0-500 taka for the internet. 12.5% of respondents paid 500-1000 taka for internet access.

Table 6.5 Amount of internet speed

	<i>Number of respondents</i>	<i>Percentage</i>
<i>No internet cost</i>	5	31.3%
<i>0-500 taka</i>	9	56.3%
<i>500-1000</i>	2	12.5%
<i>Total</i>	16	100.0%

6.2.3 Service-related support from Union Digital Centers

UDC entrepreneurs have expectations of getting service-related support from union digital centers. Table 1.6 shows that more than half of the respondents (56.3%) received service-related support from Union Parishad. Rest 43.8% did not get any service-related backing from the government.

Table 6.6 Service-related support from Union Parishad

	<i>Number of respondents</i>	<i>Percentage</i>
<i>Yes</i>	09	56.3%
<i>No</i>	07	43.8%
<i>Total</i>	16	100.0%

Though UDC entrepreneurs have expectations of receiving support from UPs, Union Parishad has been trying to give adequate support to UDCs. Government is successful in terms of service delivery and giving consent.

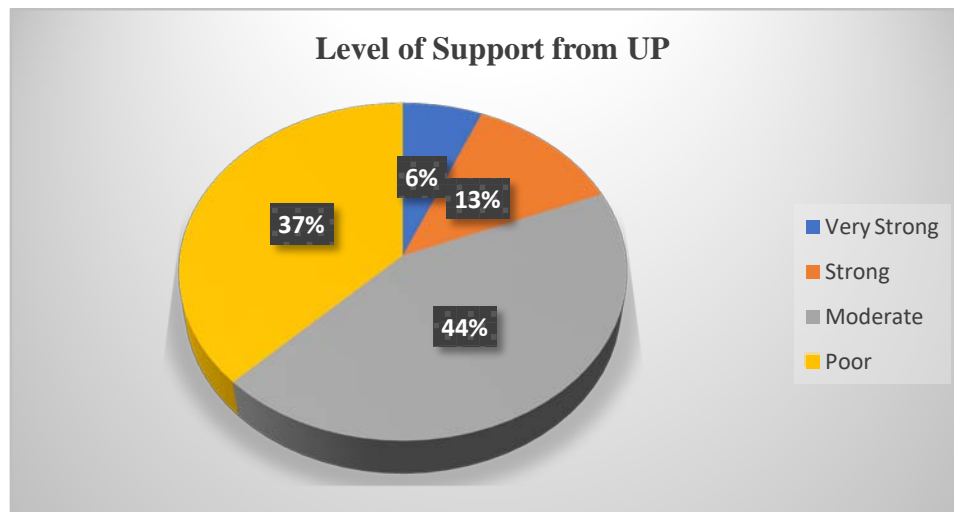


Figure 6.1 Level of Support from UP

6.3 Structure and management system of UDCs in providing e-services

Union Digital Center is a digital initiative of the government to promote service delivery at the local level. The journey of UDC was rooted in Union Information and Service Center (UISC). This initiative has come from Public-Private Partnership (PPP) Program. In 2009, the Access to Information and Local Government Division initiated the journey of UDCs, including government services, commercial services, and information services. These services are delivered after paying the service fee, and this has created an opportunity to generate revenue for the entrepreneurs. Employment opportunity has been expanded gradually resulting in encouraging new entrepreneurs. Thus, a one-stop service center was inaugurated in Bangladesh, especially at the remote corner of rural local government. However, this chapter describes the structure and management system of Union Digital Center in providing e-services. It also discusses establishment, location, qualifications, availability, gender identity of entrepreneurs, service delivery process, monitoring system, training received by entrepreneurs, training opportunity provided by the UDC monitoring committee, decision making power of entrepreneurs, and engagement of female entrepreneurs in the UDC's functions.

6.3.1 Establishment of UDCs

Union Digital Center (UDC) was initially experimented with along with the Access to Information (a2i) Programme of the Prime Minister's Office of Bangladesh in 2009 (TIB 2017). In this pilot program, the United Nations Development Program (UNDP) and the United States Agency for International Development (USAID) provided adequate technical support. Subsequently, the journey of UDCs officially started in 2010 in Bangladesh (UNDP 2010). During the initial stage, the government established 13,000 digital centers which provide easy access to services at the local level. At present, our government has established a total of 4554+ UDCs throughout the country (<https://a2i.gov.bd/publication/union-digital-centers/>).

6.3.2 Sex of Entrepreneurs

Based on the UDC circular, each UDC will be composed of one male and a female entrepreneur. The survey found that 44% UDCs have only male entrepreneurs and 56% UDCs have both male and female entrepreneurs. In some cases, it is found that both husband and wife are employed as entrepreneurs.

6.3.3 Qualification of Entrepreneurs

The survey finds that most of the entrepreneurs have sufficient academic backgrounds. 62% of respondents have received tertiary level education, and 38% of respondents have acquired secondary education.

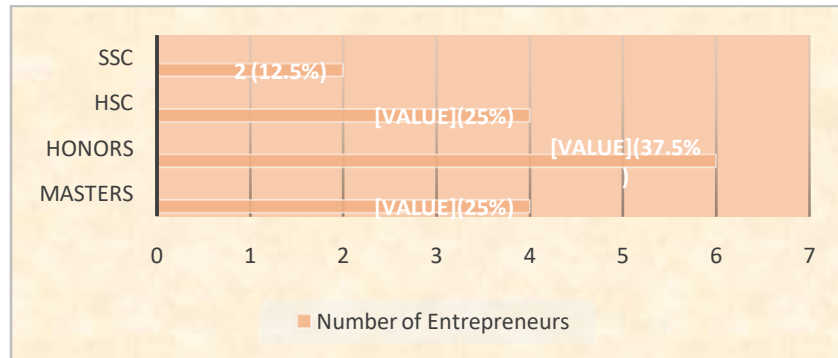


Figure 6.2 Qualification of Entrepreneurs

6.3.4 Availability of the Entrepreneurs

UDCs are generally run by two entrepreneurs- one male and another female entrepreneur. Entrepreneurs are supposed to attend regularly in the UDC office to provide services to citizens.

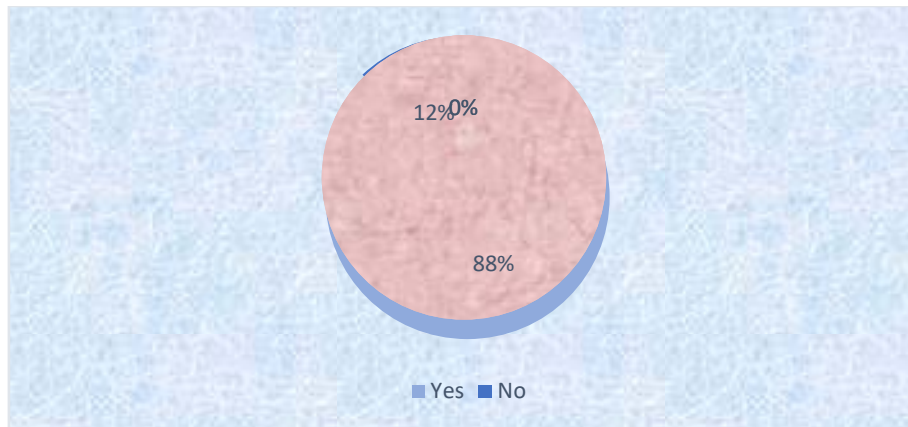


Figure 6.3 Presence of Entrepreneurs at UDCs

Chart 8. shows that 88% of entrepreneurs regularly attend the UDC office to provide various services to recipients. It means that entrepreneurs are very committed to delivering government, commercial, and information services.

One entrepreneur shared his opinion:

I regularly attend in my office known as Union Digital Center. I maintain my professionalism and code of ethics and continue my academic study while getting adequate support from other entrepreneurs if I cannot attend the digital center. Even female entrepreneur regularly attends and provide good support. Thus, inter-organizational support helps to keep a sustainable environment in the organization. I maintain a register for my office so that every entrepreneur must be present timely. In my office, I have recruited more entrepreneurs to meet the needs of the citizens by delivering services. Even I have opened a branch of UDCs with the permission of Access to Information. As a result, citizens tend to attract receiving services from Union Digital Center. Now, I just regulate and supervise the functions of two UDCs (One is attached to the Union Office).

However, citizens have different opinions while receiving specific services from Union Digital Centers (UDCs).

Table 6.7 Availability of Entrepreneurs while receiving services by the recipients

No	Nature of the Services	Availability of Entrepreneurs		Total Respondents
		Yes	No	
1	Government Service	70 (87.5%)	10 (12.5%)	80
2	Commercial Service	80 (100%)	----	80
3	Information Service	69 (86.3%)	11 (13.8%)	80
4	Total	219 (91.25%)	21(8.75%)	240

Table 8.2 shows the response of the service receivers about the presence of UDC entrepreneurs while receiving services. 90% of respondents opined that they found entrepreneurs in the office to avail themselves of all types of services. So, recipients approached entrepreneurs comfortably for receiving particular services.

6.3.5 Service Delivery Process

UDC operates as an agent of the government to promote e-service delivery. In the existing process, citizens need to present at UDCs for getting specific services. If UDC is appropriately equipped to deliver the required service, then citizens can easily avail the services. All kinds of government, commercial, and information services are now provided in a manual process though service must be delivered electronically at the recipient's door.

Table 6.8 Nature of services at Union Digital Centers (UDCs)

<i>No</i>	<i>Nature of Services</i>	<i>Mode of service delivery</i>		<i>Total</i>
		Manually	Electronically	<i>Respondents</i>
1	Government Service	80	00	80
2	Commercial Service	72	08	80
3	Information Service	32	48	80
4	Total	240	00	240

Table 8.3 shows that almost all the recipients received services manually. It means significant changes have not been made in e-service delivery. Citizens are not getting paperless services. They have to bear transportation costs for specific services. The only positive sign is that the government has spread the service delivery function under one umbrella delivered by the entrepreneurs at the local level. Only five recipients received email services electronically. They require some information that UDC entrepreneurs forwarded. Thus, they quickly received services and paid via b-kash.

One entrepreneur shared his opinion-

The existing service delivery process is entirely manual. Most local people do not have access to the internet, uninterrupted electricity, printers, etc. Although UDC is prepared to deliver services electronically, the local people are not ready to receive benefits sitting at home. Very few people have access to the internet, frequent electricity, and printers, and only they can avail themselves services in person. Due to the inability of the recipients, the objectives of e-service are not being fulfilled. As a result, citizens prefer to come to the office physically and receive services at hand. The challenging thing is that number of visits increases due to the absence of actual e-service delivery.

6.3.6 Monitoring System

To run the monitoring system of Union Digital Center, the government has set up a committee known as UDC Monitoring Committee. The Chairman of Union Parishad leads this monitoring committee. Based on the survey conducted among 16 unions, 63% of the Chairman said they have a monitoring committee to monitor the activities of UDCs. Rest 37% of Unions do not have any monitoring committee. So, the monitoring system has not been appropriately ensured in all UDCs at the local level (see Chart 8.5).

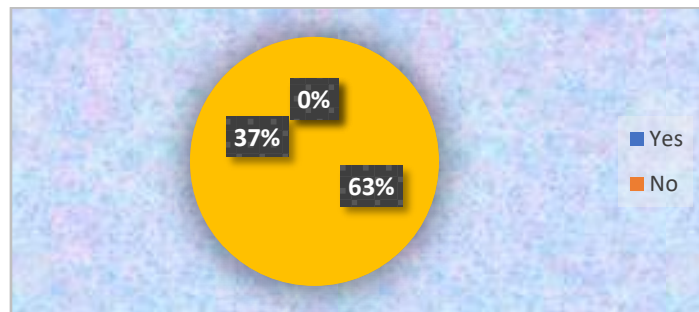


Figure 6.4 Presence of UDC monitoring committee

44% Chairman of Union Parishad (see Chart 8.6) opined that they monitor the activities of Union Digital Centers in a time fashioned manner. A similar question was asked 16 entrepreneurs whether the UDC monitoring committee monitors the activities or not. 44% of entrepreneurs opined that the monitoring committee monitors the activities, and 20% do not know about the monitoring committee at all (see Chart 8.7). So, the response from Chairman and UDC entrepreneurs corresponds to each other. It means that the Chairman of Union Parishad is not appropriately discharging the monitoring process of UDCs. Even this monitoring committee is not formed regularly. Only 25% Chairman of Union Parishad (See Chart 8.8) opined that they regularly form UDC monitoring committees. As a result, UDCs' operation stays out of monitoring and supervision, leading to dysfunction in the digital center.

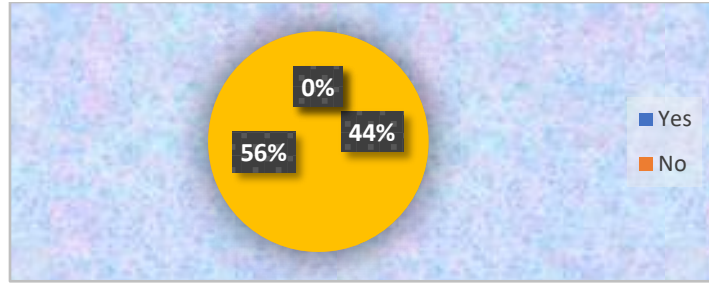


Figure 6.5 Chairman's opinion regarding UDC Monitoring Committee

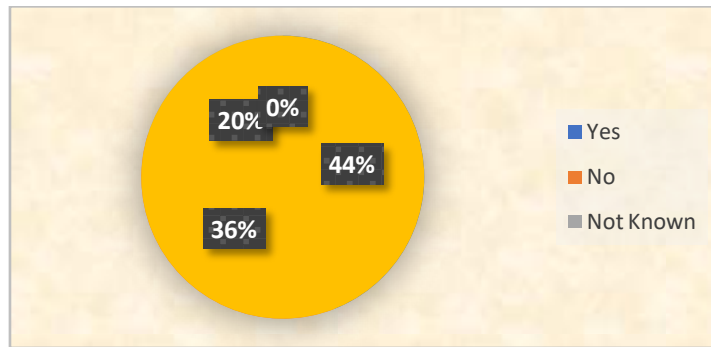


Figure 6.6 Entrepreneur's view on monitoring activities by UDC Monitoring Committee

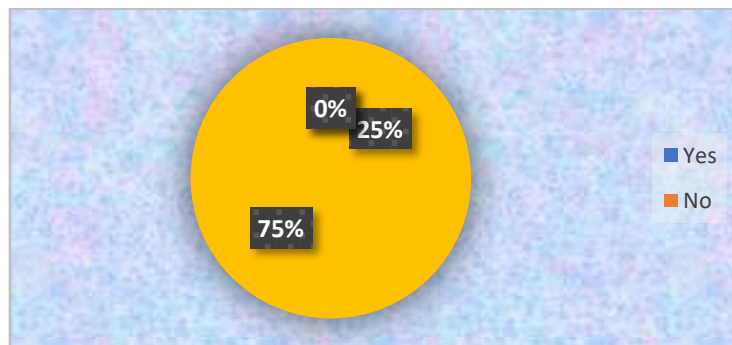


Figure 6.7 Formation of UDC monitoring Committee

One of the Chairman opined that-

We provide training for entrepreneurs so that they can be skilled and experts. As far I know that all the entrepreneurs do not receive any training. Being a professional and academic person, I understand why training is essential and deliver training to entrepreneurs. As a

result, entrepreneurs of Union Parishad perform very smoothly, and recipients receive services timely. I try to make it continue to make the recipients effective. I got the award for my initiative. This Union was declared as the best union at Upazila in 2018, the best Union at Rajshahi Division in 2019, and the best union in the whole country among all the Unions in 2020.

In some cases, it is expressed by one Chairman-

I do not have any instructions and guidelines on how to provide training to entrepreneurs. My entrepreneurs received training since they joined in union digital center. But it is not happening now. The entrepreneurs are not getting this opportunity, and they are properly doing their job. If we have any guidelines from the government, then formal training can be arranged for the entrepreneurs. This initiative can be beneficial to enhance the abilities, skills, and aptitudes of entrepreneurs.

6.3.7 Training received by the entrepreneurs

To ensure effective service delivery, entrepreneurs require skills, knowledge, and capabilities. In the survey, 90% of entrepreneurs received training on the basics of computer operation. Some sporadic training was also received by the entrepreneurs, including Graphics design (20%), Web development (10%), and others (10%). With the help of different types of training received by the entrepreneurs, they enable them to earn more money.

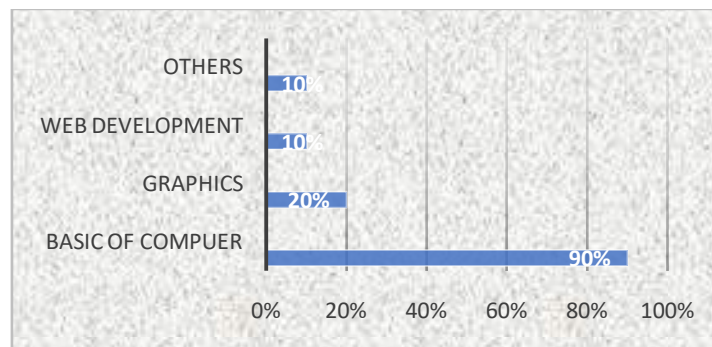


Figure 6.8 Training received by entrepreneurs

One entrepreneur articulated his opinion-

We received training on basics of computer which is very common for all. I honestly admit that this skill is essential for entrepreneurs since many entrepreneurs have the slightest knowledge of computers. The number of these types of entrepreneurs is not negligible. As a result, this type of training is very effective for them because they are getting attached to the basics of a computer day by day. On the other hand, this basic knowledge of computers is not

adequate in the current era. Having provided basic computer skill-based training, the government needs to provide training on technical aspects that will help to generate more income for entrepreneurs, even though these skills help expand service delivery, including various types of services. Though the government is nowadays providing training on technical issues, it is not sufficient for all entrepreneurs. So, the content of the training needs to be expanded progressively. We expect that government will take some immediate actions to make entrepreneurs skilled, efficient, and effective in the long run. Sometimes, training is not being organized regularly, which is affecting the performance of UDC entrepreneurs. So, it is expected to make sure that continuous training is being delivered among entrepreneurs.

6.3.8 Training provided by the UDC monitoring committee

UDC monitoring committee has the responsibility to organize a training session for the entrepreneurs. Only 25% Chairman opined that they organize training sessions. As most entrepreneurs are deprived of adequate training facilities, their skills and qualifications will not be enhanced and consequently affect quality service.

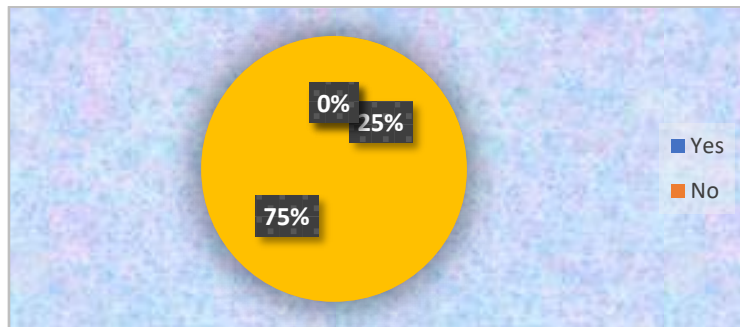


Figure 6.9 Training provided by the UDC monitoring committee

One UDC entrepreneur claimed that-

The Chairman of Union Parishad is not properly taking care of the Union Digital Center. Sometimes, he comes and oversees the activities of Union Digital Center. Being an elected representative of Union Parishad, Chairman has specific responsibilities to carry out the effective operation of Union Digital Center. But Chairman imposes some tasks upon the UDC entrepreneur, and he is obliged to follow the chairmen's dictations. Regarding training issues, no initiative has been taken place after the journey of Union Digital Center. As a result, the entrepreneur is staying out of training sessions resulting in affecting skills, aptitudes, etc. As we are staying in the remote corner of the Upazila, it is pretty challenging to go to Dhaka for receiving training sessions. We shared our opinion before Chairman regarding the training issue. But, no initiative for training has taken place yet. This situation is ultimately affecting the quality of UDC entrepreneurs.

6.3.9 Engagement of female entrepreneurs

In every UDC, both male and female entrepreneurs need to work supportively. In some cases, it is found that female entrepreneurs are not found, or they do not work actively. In this survey, male entrepreneurs responded that 80% of female entrepreneurs have a low level of engagement in UDC's function. They are enrolled here only by name and not for doing any sort of service delivery functions. Many of them have not finished their study yet. So, it becomes difficult to get them actively involved in activities. Only 15% of female entrepreneurs have medium-level engagement in UDC's function. They sometimes attend UDC to help male entrepreneurs.

In some cases, husband and wife simultaneously work as UDC entrepreneurs and support each other if one of them is unavailable to attend UDC for any business. Some female entrepreneurs are highly attached to the functions of UDCs. They are highly educated and very responsive to their assigned duties.

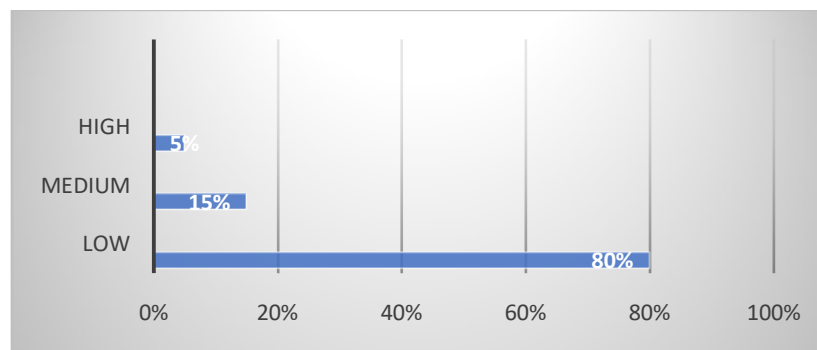


Figure 6. 10 Level of engagement of female entrepreneur in the function of UDCs

6.3.10 Recruitment and Selection Process

UDC entrepreneurs operate Union Digital Centers. The recruitment and selection are the same since the journey of UDC started. The government took no initiative, and they are not taking this issue seriously. There is no fixed rules and regulation regarding the recruitment and selection process of entrepreneurs. As a result, a systematic approach is not being followed, which is affecting UDC's operation. While starting the journey of UDCs, some entrepreneurs got direct recruitment. In the survey, it is found that some entrepreneurs have a very low level of knowledge, skills, aptitude, and qualification in terms of service delivery. Consequently, the

performance of those Union Digital Centers is not practical in terms of communication, the satisfaction of the customer, attitudes, behaviour, level of thoughts, and so on. In that case, skilled employees can bring a change and revolution in the service delivery process of Union Digital Centers.

One of the entrepreneurs shared his journey in UDC:

I was recruited as an entrepreneur when the journey of UDC was started in Bangladesh for the first time. I have good communication with the existing Chairman and Members. For this reason, I got information that a male and female entrepreneur will be appointed at Union Level. I received training under Access to Information (A2I). Due to my attachment, I received the information and applied to get selected for playing the role of a UDC entrepreneur in Union Parishad. However, if there have been systematic procedures for recruitment and selection, it would be very helpful to find more competent and potential employees.

In one case, one of the entrepreneurs said that-

The Chairman of Union Parishad is his Uncle, so he got the information to get recruited. My uncle suggested I apply here and receive training from Access to Information. After that, I received training and joined here as an entrepreneur. Without the support of my uncle, it could have been impossible to engage at UDC as an entrepreneur.

It means that the recruitment and selection process has not been addressed in the law. As a result, this process is not being done systematically. Due to the absence of specific rules, sometimes Chairman's kith and kin may be recruited without considering their skills, aptitudes, abilities and qualifications. In that case, it is essential to take the initiative to formulate specific laws and regulations for administering the recruitment and selection processes of UDC entrepreneurs. If possible, this will help develop the employees' performance in the long run. In default, the organization will suffer seriously.

6.3.11 Job Security

Job security is an essential aspect of human resource management. In the context of the Union digital center, the job security of UDC entrepreneurs is paramount. During the interview, entrepreneurs were asked whether they have job security or not. All the UDC entrepreneurs

opined that they do not have job security at the Union digital center. They do not know what will be the prospects of entrepreneurship.

During the interview, one chairman shared his opinion-

“I do not know what is going to happen in future. Entrepreneurs do not have any job security. We have no direction regarding them. UDC entrepreneurs have been playing supporting role not only for delivering services to citizens but also playing a supporting role in some activities of Union Parishad”

One of the experts alleged that

“If the entrepreneur does not work independently due to lack of job security, they will not be able to work properly. They have to have job security and have to have the freedom to take the decision”. Chairmen’s are not supposed to interfere in the UDC entrepreneur recruitment and selection. But unfortunately, they are doing so. It has to be stopped. Otherwise, no qualified entrepreneur will agree to hold this position and run the UDC”.

6.4 Nature of service delivery and its impact on service recipients

6.4.1 Existing Performance of UDCs

Union Digital Center performs at the local level to deliver government, commercial and various information services to citizens. The Chairman of Union Parishad has duties to monitor activities of Union Digital Center. So, the Chairman of Union Parishad has the responsibility to be adequately briefed about the performance of the Union of Digital Center.

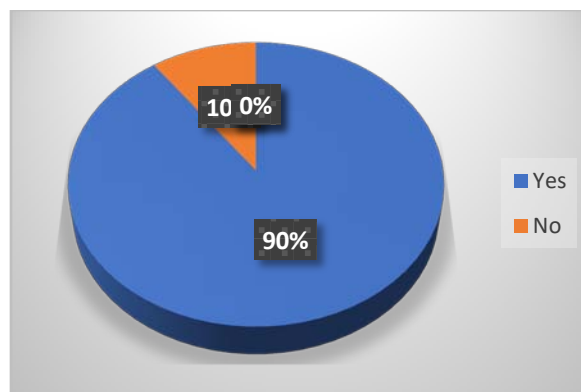


Figure 6.11 Information regarding performance of UDCs

In the survey, Chairmen of Union Parishad were asked whether they are informed about the performance of Union Digital Centers. 90% Chairman opined that they are informed about the performance of Union Digital Center. They take proper care of the overall activities of Union Digital Centers along with supervising, guiding and monitoring activities. These UP Chairmen are well-informed about what is happening at UDCs or any problem regarding service delivery.

UP Chairman of Fapor Union under Bogra Sadar Upazila expressed his opinion-

“I regularly do the follow up of activities of Union Digital Center. I regularly receive updates on UDC’s function. The entrepreneur daily attends at UDC center. After concluding everyday’s task, the UDC entrepreneur shares his experience of what happened throughout the day. If any emergency cases arise regarding service delivery, I communicate to the UDC entrepreneur how this issue can be resolved. In most cases, I find that the entrepreneur is responsive, dedicated, and committed to carrying out his responsibilities. As a result, citizens are very satisfied regarding the performance of Union Digital Center.”

10% UP chairman opined that they are not informed about the performance of Union Digital Center. They perceive that it is not their official duty to know what is happening at Union Digital Center. According to them, Union Digital Center is a separate entity, and the entrepreneurs have discretion regarding the modus operandi of their business.

One of the Chairmen responded that-

“I do not find any necessity to communicate with the entrepreneur of Union Digital Center. The performance of UDC is not satisfactory. The entrepreneur is not responsible for service delivery to citizens. As Union Digital Center is a separate entity at the Union level, it is not the responsibility of the Chairman to know what is happening at Digital Center. So, I think it is not under Chairman’s duty to have information regarding UDC’s performance.”

During the interview, Chairmen were asked about daily meetings between the Chairman and UDC entrepreneur, taking feedback of UDC entrepreneur and service receivers and the discipline and integrity of entrepreneurs.

Table 6.9 Measurable indicators regarding the role of UP Chairman in Union Digital Center

Upazila	Union	Daily Meeting	Feedback from UDC entrepreneur	Service receivers' feedback	Discipline	Integrity
Nabinagar	Barikandi	X	X	X	X	✓
	Salimang	X	✓	✓	X	✓
Bancharampur	Tejkhali	X	✓	X	X	✓
	Dorikandi	X	✓	X	X	✓
Sherpur	Garidah	X	✓	X	X	✓
	khamarkandi	X	✓	X	X	✓
BoguraSadar	Lahiripara	X	✓	✓	✓	✓
	Fapor	✓	✓	✓	✓	✓
Sylhet Sadar	Kandigaon	X	X	X	✓	✓
	Mollargaon	X	X	X	X	✓
Dakshin Surma	Baraikandi	X	X	X	X	✓
Savar	Tuker Bazar	X	X	X	✓	✓
	Teghoria	X	X	✓	✓	✓
	Konda	X	X	✓	✓	✓
Keraniganj	Six no Birulia	X	X	✓	✓	✓
	Seven no savar	X	X	✓	✓	✓

Table 1.1 shows that Fapor union has decent performance regarding service delivery from UDCs. UDC entrepreneur of Fapor Union commented that-

“Chairman is very responsive, and he conducts the regular meeting. Apart from that, he hears complaints regarding service delivery. He also monitors whether the entrepreneurs are regularly attending or not”

While conducting focus group discussion, citizens admired the performance of the UDC of Fapor Union-

“We are satisfied regarding the service delivery process of the Union Digital Center. Citizens receive government, commercial and information services without any hassle and disturbance.”

Even all the Chairmen opined that-

“UDC entrepreneurs have integrity, and they have the dedication to provide services to citizens. UDC entrepreneurs try to maintain their dedication, honesty and trustworthiness.”

On the other hand, the daily meeting does not take place between the Chairman and UDC entrepreneurs. Some UDC entrepreneurs maintain discipline, and they timely attend at UDC to provide services. Chairman in a few unions take feedback from service providers and service receivers to know the performances of UDC. During the interview of UDC entrepreneurs, it was found (see Chart 1.2) that 94% of Chairmen do not take feedback from the UDC entrepreneurs. Even, almost all the Chairmen do not organize a meeting with entrepreneurs regarding the services of UDC.

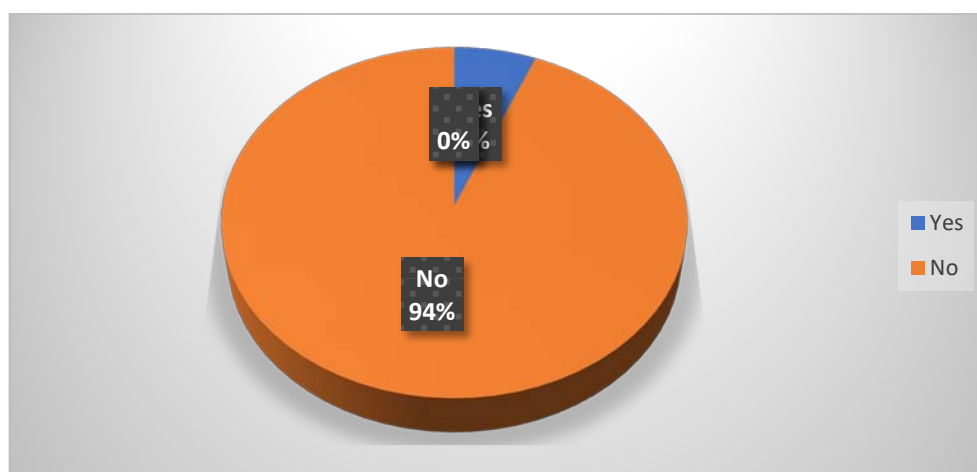


Figure 6.12 Taking feedback and conducting meeting held by Chairman of Union Parishad

In the focus group discussion, it was found that most of the Chairmen do not take citizens' feedback whether they are receiving services or not. In the focus group discussion, citizens alleged that-

“Most of the time, Union Chairman is not available in UP office. So, if there are any issues regarding services, we hardly can lodge complaints and give feedback to the Chairman. So, communication gap exists between the Chairman and Service recipients.”

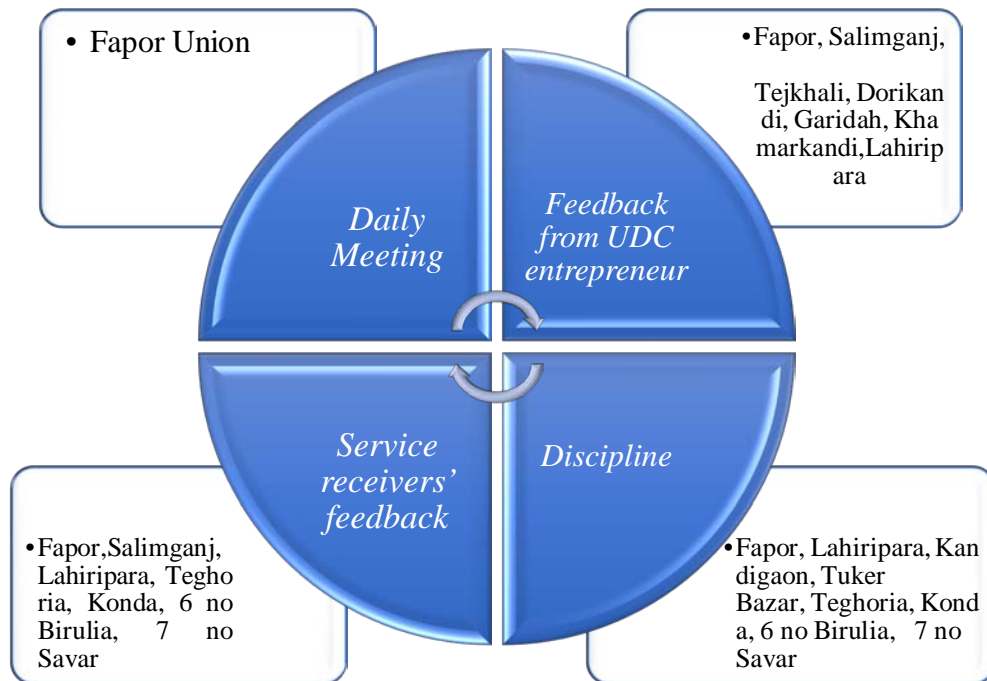


Figure 6.13 Union specific performance of union digital centers

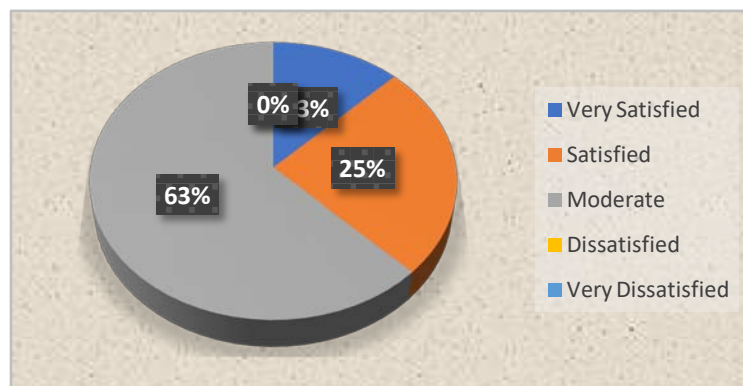


Figure 6.14 Satisfaction of Union Parishad Chairman regarding UDCs' performance

However, Chairmen were interviewed whether they are satisfied regarding the performance of the union digital center. Chart 1.3 states that most Chairmen (63%) are moderately satisfied with UDCs' performance. Only 12% of the Chairman opined that they are delighted regarding the performance of UDCs. 25% Chairman thinks that they are satisfied with UDC's performance.

Table 6.10 Measurable indicators of UDCs' performance

Upazila	Union	Regular Presence	Smart Behavior	Managerial capacity	Adequate Academic Qualification	Professional Experience
Nabinagar	Barikandi	✓	X	X	X	X
	Salimgang	✓	✓	X	✓	X
Bancharampur	Tejkhali	✓	✓	X	✓	X
	Dorikandi	✓	✓	X	✓	X
Sherpur	Garidah	✓	✓	X	✓	✓
	khamarkandi	✓	✓	✓	✓	X
BoguraSadar	Lahiripara	✓	X	X	✓	X
	Fapor	✓	✓	✓	✓	✓
Sylhet Sadar	Kandigaon	✓	✓	✓	✓	✓
	Mollargaon	✓	X	✓	✓	✓
Dakshin Surma	Baraikandi	✓	✓	X	X	X
	Tuker Bazar	✓	✓	X	✓	X
Savar	Teghoria	✓	✓	X	✓	X
	Konda	✓	✓	X	✓	X
Keraniganj	6 no Birulia	✓	✓	X	✓	X
	7 no savar	✓	✓	X	✓	X

Table 1.2 shows areas of performance of UDC entrepreneurs described by the UP Chairman. Most of the time, UDC entrepreneurs regularly attend UDC and show smart behaviour with service recipients. But a good number of UP Chairmen has alleged that they hardly have any managerial capacity to ensure adequate performance in service delivery. On the other hand, though most UDC entrepreneurs have academic qualifications, they hardly have professional experience. In a word, Chairmen are not informed about their duties and responsibilities though they are saying that they have information regarding UDC's performance.

6.4.2 The behaviour of the UDC entrepreneurs

Behaviour is essential to improve the service delivery process at UDCs. So, a correlation was conducted to know whether behaviour influences the satisfaction of the service receivers. In government service, the correlation (Pearson) value is .323, which means there is no correlation between happiness and behaviour of the UDC entrepreneurs (see annex 7.4.1.2). In the case of government services, money is not a matter of concern. Instead, receiving service is highly important. In the case of information service, the correlation (Pearson) value is .112, which means there is no correlation between satisfaction and behaviour of the UDC entrepreneurs (see

annex7.4.1.3). Because survey shows that most of the recipients received information services while sitting at home. On the other hand, in commercial service, the correlation (Pearson) value is 0.696 (see annex 7.4.1.1) which means there is a correlation between satisfaction and behaviour of the UDC entrepreneurs. Because commercial services of UDCs cannot be provided electronically rather, local people need to appear physically to receive benefits.

Table 6.11 Behavior of the UDC entrepreneurs and service recipients' level of satisfaction

<i>Name of the Services</i>	<i>Very Satisfied</i>		<i>Satisfied</i>		<i>Neutral</i>		<i>Dissatisfied</i>		<i>Very dissatisfied</i>	
	No	%	No	%	No	%	No	%	No	%
<i>Government Services</i>	08	10	54	67.5	13	16.3	05	6.3	00	00
<i>Commercial Services</i>	08	10	55	68.8	09	11.3	03	3.8	05	6.3
<i>Information Services</i>	18	22.5	56	70	05	6.3	01	1.3	00	00

From the above table, it is found that service recipients are delighted regarding the behaviour of the service providers.

One of the experts opined that-

“UDC entrepreneurs are highly qualified and skilled. As a result, they demonstrate satisfactory behaviour that has a reflection in service delivery.”

6.4.3 Information of the services of UDCs

For ensuring better services, access to information is decidedly important. In the survey, citizens were asked whether they are well-informed about the government, commercial and information services of union digital centers.

Table 6.12 Citizens' Perception whether they Know about the Services of UDC

	<i>Government Service</i>	<i>Commercial Service</i>	<i>Information Service</i>
Yes	100%	100%	80%
No	00%	00%	20%

In Table 1.6, all the service recipients were properly informed about the government and commercial services of UDCs. In the case of information services, more than one-third of recipients were informed that they would get information services from the union digital center. So, citizens mostly come to receive government and commercial benefits from UDCs.

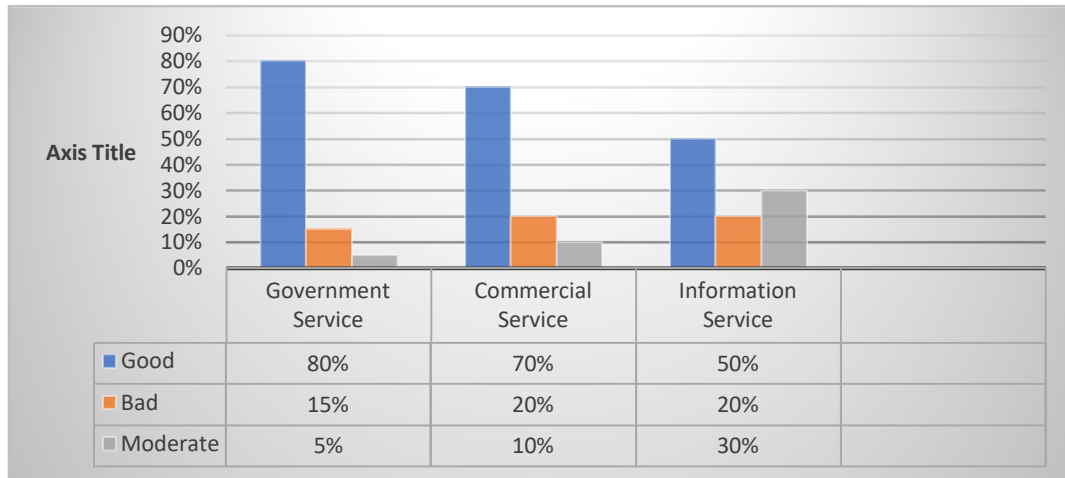


Figure 6.15 Citizens’ perception regarding Government, Commercial and Information services

Generally, 80% of local people said ‘yes’ that they have a good perception regarding government services from UDCs. In commercial services, 70% of local people said ‘yes’ that they have a good perception regarding commercial services. But in the case of information services, half of the respondents do not have a good perception. Citizens sometimes get information on agriculture, health, industry, trade and so on smoothly.

During FGDs and questionnaire survey, citizens explained why they have good, bad or moderate perceptions regarding services provided by the union digital centers.

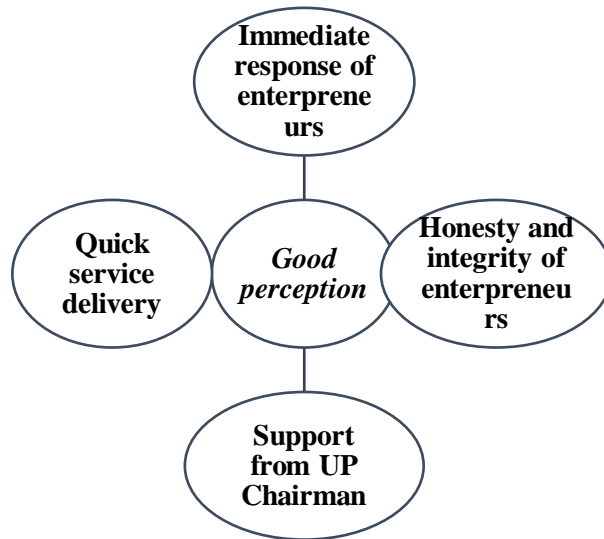


Figure 6.16 Reasons for good perception regarding services of UDCs

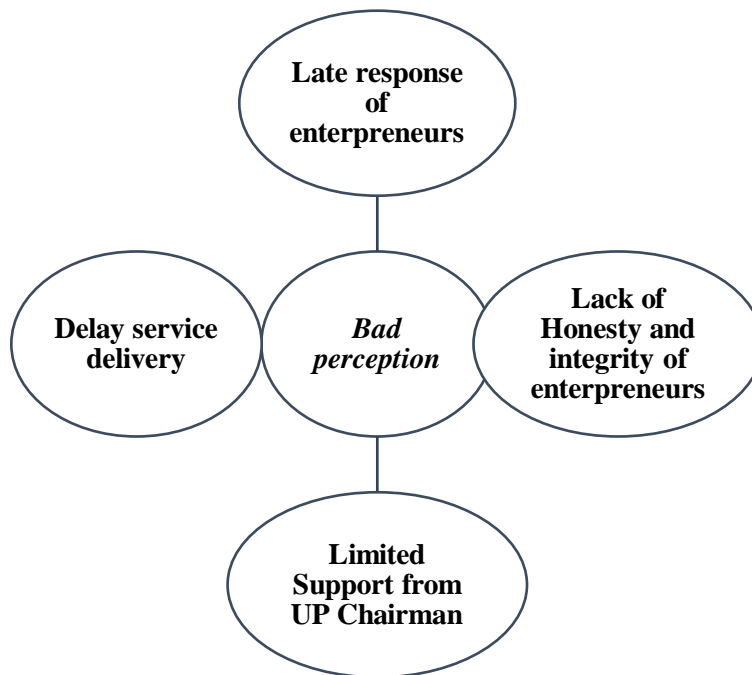


Figure 6.17 Reasons for bad perception regarding services of UDCs

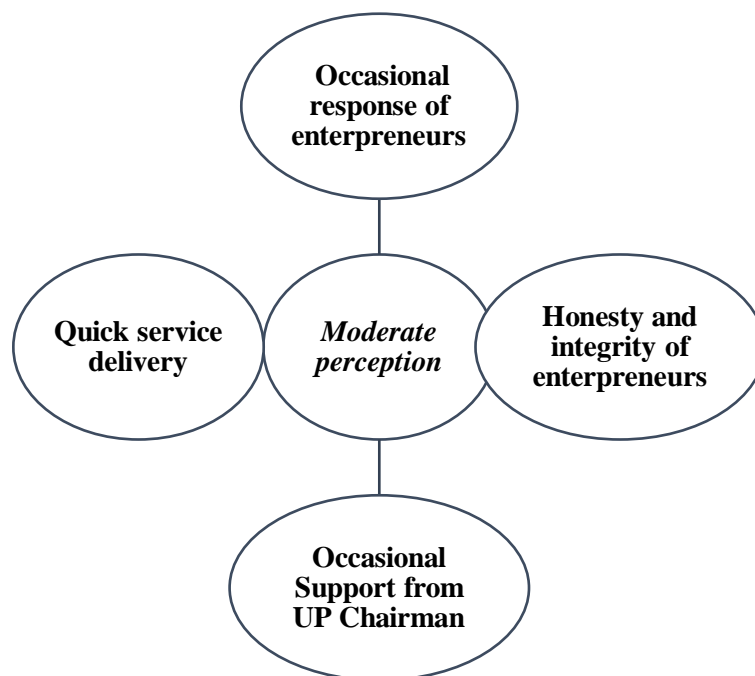


Figure 6.18 Reasons for moderate perception regarding services of UDCs

6.4.4 Source of information regarding services of Union Digital Centers (UDCs)

Union Digital center has been operationalised in all union parishads of Bangladesh. The main purpose was the dissemination of information among the local people. At present, there are significant numbers of media to disseminate information among the citizens.

Table 6.13 Source of information regarding services of Union Digital Center (UDCs)

	<i>Government Service</i>		<i>Commercial Service</i>		<i>Information Service</i>	
	<i>Number of respondents</i>	<i>Percentage</i>	<i>Number of respondents</i>	<i>Percentage</i>	<i>Number of respondents</i>	<i>Percentage</i>
<i>Social Media</i>	27	33.8%	18	22.5%	14	17.60%
<i>Government notice</i>	13	16.3%	36	45%	18	22.5%
<i>Television</i>	9	11.3%	10	12.5%	00	00
<i>Print media</i>	7	8.8%	1	1.3%	00	00
<i>Electronic Media</i>	7	8.8%	4	5%	10	12.5%
<i>Community people</i>	17	21.3%	11	13.8%	38	47.5%
Total	80	100%	80	100%	80	100%

UDCs got famous due to social media, government notice, television, print media, electronic media, and communication among community people. More than one of fourth respondents opined that they knew about government services from social media and community people. In commercial services, almost 50% of service recipients knew about services through government notice. 18% of recipients knew about commercial services through social media.

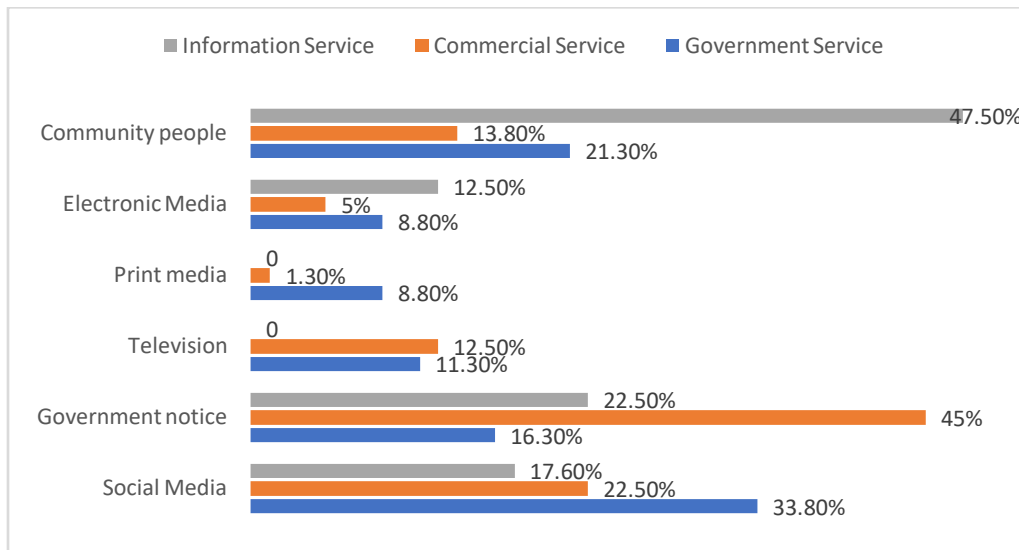


Figure 6.19 Source of information regarding services of Union Digital Center (UDCs)

There are various reasons why information about government, commercial and notification services of UDCs are spreading among the local people.

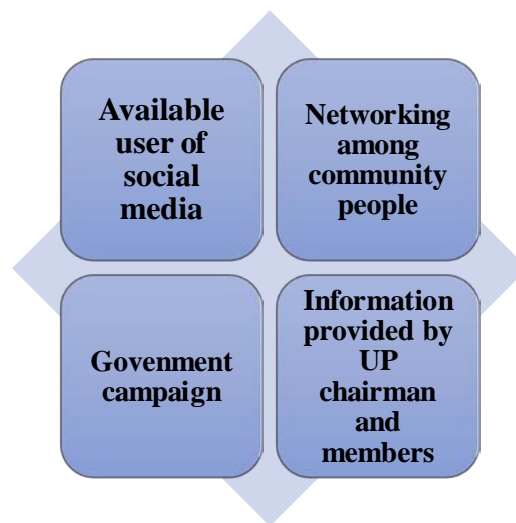


Figure 6.20 Diffusion of information regarding the government services of UDCs

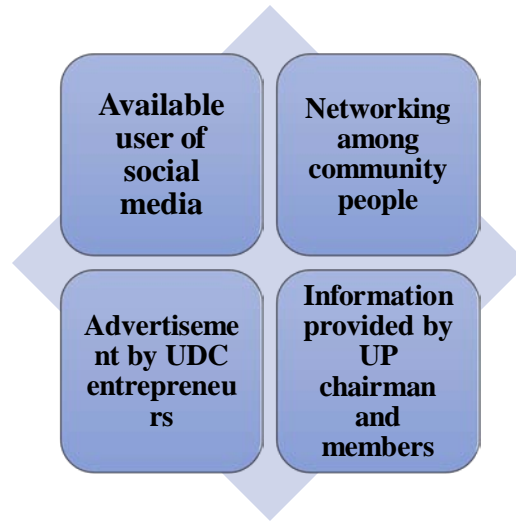


Figure 6.21 Diffusion of information regarding the commercial services of UDCs

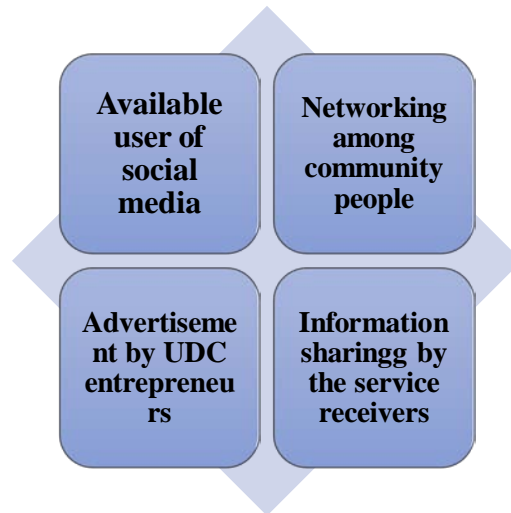


Figure 6.22 Diffusion of information regarding the information services of UDCs

6.4.5 Service received from Union Digital Centers (UDCs) by the recipients

Local people usually receive various benefits from union digital centers. Table 1.8 shows the number of recipients in service delivery from UDCs, including online birth registration, online university admission, public exam result and citizenship certificate.

Table 6.14 Government service recipients from Union Digital Centers (UDCs)

	<i>Number of Service Recipients</i>	<i>Percentage</i>
Online Birth Registration	46	57.50%
Online University Admission	08	10%
Public Exam Result	18	22.50%
Citizenship Certificate	08	10%
Total	80	100%

57.50% received birth registration service from UDCs. 22.50% of recipients went to UDC for getting public exam results. In addition, citizens also go to UDCs for getting citizenship certificates and online applications for university admission.

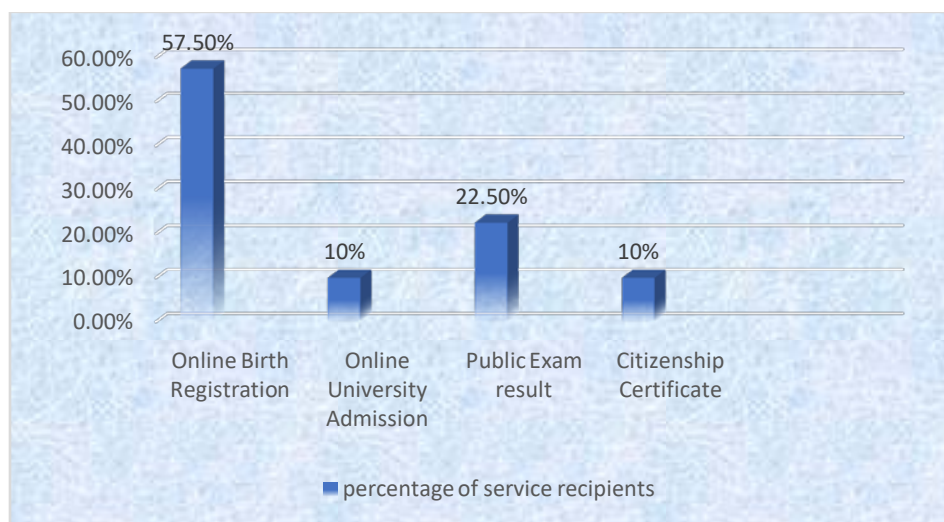


Figure 6.23 Number of Government service recipients from Union Digital Center (UDCs)

All the government services were received manually (see table 1.9) by the service recipients. In the case of birth certificates, UDC entrepreneurs filled the form using BRIS software. After that, recipients received the services. In online applications for university admission and public exam result, citizens need to come in person at UDCs.

Table 6.15 Mode of application and way of receiving government services

Name of the services	Mode of Application	Mode of receiving Service
Online Birth Registration	Using server filled by UDC entrepreneurs	Manually
Online University Admission	----	Manually
Public Exam Result	----	Manually
Citizenship Certificate	Filled by UDC entrepreneurs	Manually

Citizens received various commercial services like E-banking, Email, Printing, Photocopy, Internet browsing, Computer training, Compose, Photography, life insurance, English learning, Scanning, Laminating, Data entry, Phone call, Flexi load, Projector rent, Application form fill-up for Passport, Visa processing, Video conference, Video show, Height and weight measurement and so on. Table 1.10 shows various commercial services received by the local people.

Table 6.16 Commercial service recipients from Union Digital Centers (UDCs)

	<i>Number of Service Recipients</i>	<i>Percentage</i>
E-banking	36	45%
Email	17	21.2%
Printing	16	20%
Photocopy	11	13.8%
Total	80	100%

Almost half of the respondents received e-banking services from Union Digital Centers. 21.2% took email service from UDCs.

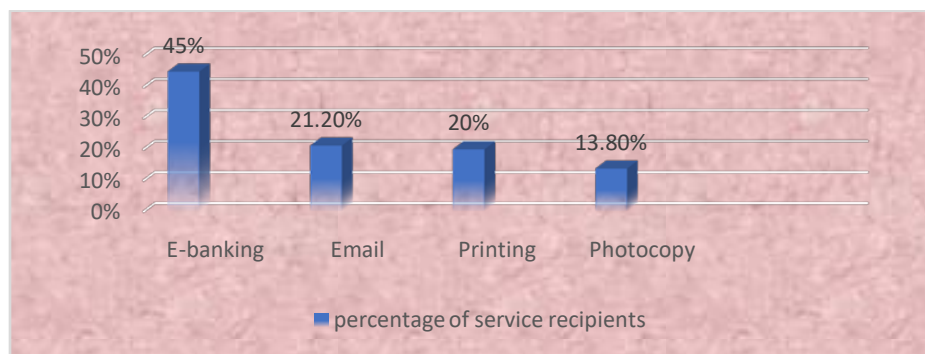


Figure 6.24 Number of commercial service recipients from Union Digital Center (UDCs)

Table 1.11 shows the mode of application and way of receiving commercial services from UDCs. E-banking, printing and photocopy services are completely manual where recipients need to appear physically at the union digital center. The only Email is such a service that can be delivered both manually and electronically.

Table 6.17 Mode of application and way of receiving commercial services

Name of the services	Mode of Application	Mode of receiving Service
E-banking	filled by both service recipients and UDC entrepreneurs	Manually
Email	----	Manually/Electronically
Printing	----	Manually
Photocopy	----	Manually

From union digital centers, citizens can avail various services like Agriculture, Health, Education, Law, Tourism, Environment and Disaster Management, Science and Technology, Industry and Commerce and Employment. In this study, respondents were chosen among those who received information services in education, commerce, agriculture etc.

Table 6.18 Number of information service recipients from Union Digital Centers (UDCs)

	<i>Number of Service Recipients</i>	<i>Percentage</i>
Education	56	70%
Commerce	20	25%
Agriculture	02	2.5%
Others	02	2.5%
Total	80	100%

Table 1.12 shows that almost three forth' respondents received education-related information services. Only one-fourth of respondents received commercial related information services.

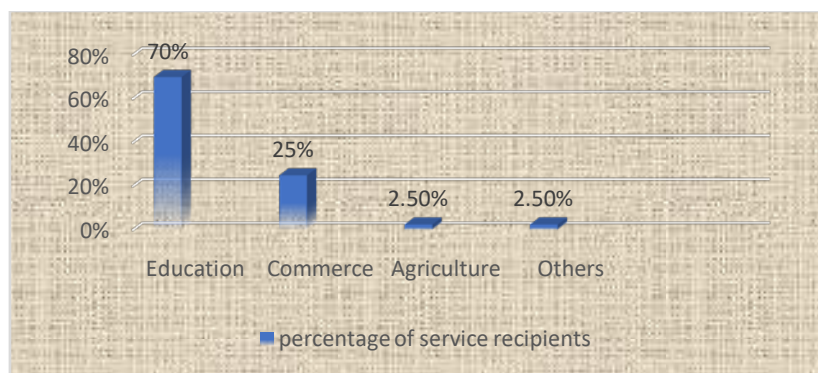


Figure 6.25 Number of information service recipients from Union Digital Center (UDCs)

Table 1.13 shows that only education and commerce-related information service were delivered both manually and electronically. Sitting home, citizens call UDC entrepreneurs for getting information. In the case of agriculture service, all respondents attended only physically for getting adequate information.

Table 6.19 Mode of application and way of receiving information services

Name of the services	Mode of Application	Mode of receiving Service
Education	----	Manually/Electronically
Commerce	----	Manually/Electronically
Agriculture	----	Manually

In a word, most of the services are provided manually (see table 1.14) from union digital centers like all government services. There is no scope for getting government services delivered right at home. Service recipients do not have adequate internet and accessories. Even they do not have sufficient e-literacy, and they are not enabling to operate electronic accessories.

Table 6.20 Way of service receiving services from Union Digital Center (UDCs)

	Manually	Electronically
Government Service	100%	00%
Commercial Service	90%	10%
Information Service	40%	60%

In some cases, some commercial and information services were provided electronically by the UDC entrepreneurs. But citizens need to come to the union digital center to get various information related to commerce, trade, and agriculture.

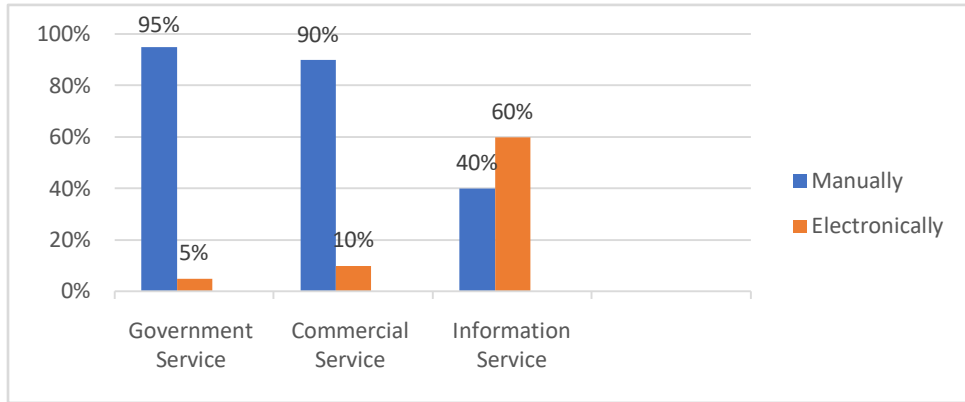


Figure 6.26 Nature of service delivery from Union Digital Centers

6.4.6 Number of Visits at UDC

People have to have engagement with the Union Digital Center to get their desired service. One of the main objections of e-governance is to reduce the number of visits and reduce the frequency of physical appearance in the office. The respondent was questioned regarding the number of visits to the Union Digital Center. They were asked how frequently they visit the Union Digital Center to get government-related services like birth and death certificates, applications for trade licenses, etc.

Table 6.21 Frequency of citizens' visits for receiving government services from UDCs

	Number of respondents	Percentage
<i>Once in a Week</i>	9	11.3%
<i>Once in a Month</i>	30	37.5%
<i>Once Every three month</i>	18	22.5%
<i>Once every six months</i>	19	23.8%
<i>Once in a year</i>	04	5%
Total	80	100.0

Most of the respondent (37.5%) has replied that they visit UDC once in a Month. Around 24% (23.8) respondents answered that they do not frequently visit, while almost 23 % (22.5) respondents replied that they visit UDC quarterly in a year. At the same time, some of the service recipients have visited frequently the UDC. Among them, 11.3 % of respondents replied that they visit UDC every week. On the other hand, only 5% of respondents answered that they barely see the UDC. They visit once a year based upon necessity

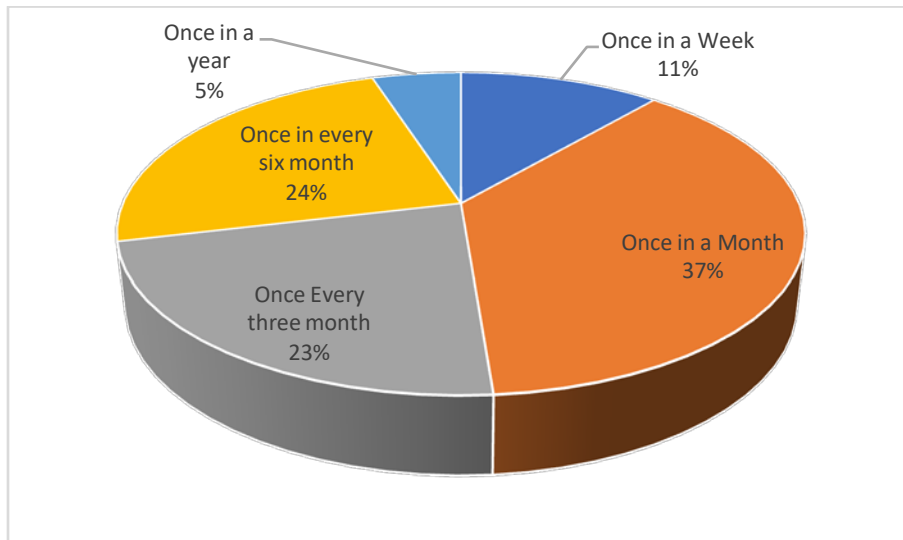


Figure 6.27 Frequency of citizens’ visit for receiving government services from UDCs

Citizens do not usually come to the Union Digital Center to avail services. Most of the participants supported the previous data for those who have participated in the Focus Group Discussion (FGD). They also responded in the FGD that they do not need to come to the UDC. replied

One of the participants of FGD has replied that-

“I used to go to the private computer shop because this Union Digital Center is not situated in the market. At the same, it is also far away from the local bazaar. UDC are a little far away from the local bazaar. Every day I have to come to Bazar and take service from that computer shop. As a result, I do not need to come twice. If this UDC center had been situated close to the local Bazar (Small Market), I would have come to UDC”.

At the same time, one of the respondents replied that-

“I have to come one time in this UDC for collection the birth certificate for my son. After that, I do not need to come for the second time. Because I have a smartphone and my son have a computer and internet. If I want to know anything, he usually helps me”.

	Table 6.22 Frequency of citizens’ visits for receiving commercial services from UDCs	
	Number of respondents	Percentage
Once in a Week	9	11.3%
Once in a Month	41	51.3%
Once Every three month	13	16.3%
Once every six months	15	18.8%
Once in a year	2	2.5%
Total	80	100.0

The respondents were questioned regarding the number of visits to the Union Digital Center, and they were asked about the frequency of their visit to the Union Digital Center for getting the commercial service etc. More than half (51.3 %) respondents replied that they visited the Union Digital Center once a month. At the same time, around 12% (11.3%) answered that they usually replied to visit UDC once a week. About 19% (18.8) respondents replied that they visited UDC twice a year, while more than 16% (16.3) respondents replied that they visited four times a year. On the other hand, only 2.5% (2 respondents) respondent replied that they rarely visit (once in a year upon necessity) the UDC to get any service. Between two respondents

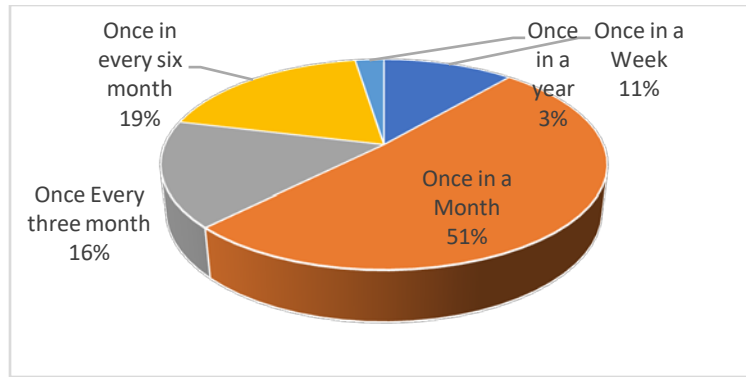


Figure 6.28 Frequency of citizens' visit for receiving commercial services from UDCs

One respondent was asked to explain that why he visits once a year. He replied that-

“Why I shall go to the Union Digital center? My son is very much an expert similar to that of Union Digital Center Entrepreneur. Last year I went there to get a Birth Certificate. Later on, I do not need to go. Even the Entrepreneur is not expert enough to meet the need. Once I went there to write an application. As he is not an expert on typing on Bangla and English, I initially had to go to the other local computer shop and took my services”.

To identify the actual scenario, Focus Group Discussion was organized in a local library regarding the Barikandi Union Digital Center, situated in Nabinagor Upazila under the Brahmanbaria District. FGD participants alleged that-

“The Entrepreneur lived in Saudi Arabia. As soon as he came to Bangladesh, he joined as Union Digital Center Entrepreneur, and he has a very good relationship with the Local elected union Parishad chairman. He is not an expert Entrepreneur compare to the neighbour UDC Entrepreneur in Salmilgong. Just go there and see how clean and organized the UDC. Why shall I come to the UDC, definitely for taking service? But look at the UDC. It is not clean. Everything looks very old and tattered”.

On the other hand, entrepreneur replied regarding the government service and commercial services that,

“Indeed, I came back from Saudi Arabia, and I have a good relation. When I joined here, this chair was empty. I do not have any separate room to sit and provide services. All of the machines and computer accessories are very old. Some of the accessories are already dead among the computer accessories, not repairable like printers and

Photocopy machines. This printer I have bought with my funding. And some of the machines are repairable, which I already did on my own. At the same time, the internet speed is very slow, and most of the time, there is no internet connection. I had to buy Mobile Data and try to ensure the services. My income is very poor. On average, my income is less than 15000-taka per month. Among these 15000 I had to pay the mobile data cost and my transportation cost. Sometimes, some people come to me and take services without paying any user fee. My primary income comes from the birth registration application. But occasionally, local people come to me concerning the Union Parishad, chairman of the local politician. In that circumstance, I am obliged to fill in the application form. Even Union Parishad Secretary are not very cordial. But they do not know that they supposed to give me the Birth Registration Fees, which has to be paid by me.

On the other hand, some people come to me and make printout copy, but they refuse to give me money. On an average, I have to subsidize 2000 to 2500 taka to manage these issues. Actually, this UDC center in on Coma and on life support. What I have earned from the abroad, I am spending them on this Union Digital Center as subsidy”.

By analyzing the statement of the service recipients and entrepreneur, it is clear that the service providing condition is poor and people are not satisfied with the way of service delivery.

	Table 6.23 Frequency of citizens’ visit for receiving information services from UDCs	
	Number of respondents	Percentage
Once in a Week	00	00
Once in a Month	00	00
Once Every three month	01	1.3%
Once in every six months	39	48.8%
Once in a year	40	50%
Total	80	100.0

Interms of information service, half (50%) of the respondents replied that they visit a once in the year UDC, while around 49 (48.8%) respondents answered that they visit UDC twicea year. On the other hand, only a very small number (1.3%) of respondents replied that he visits three times a year.

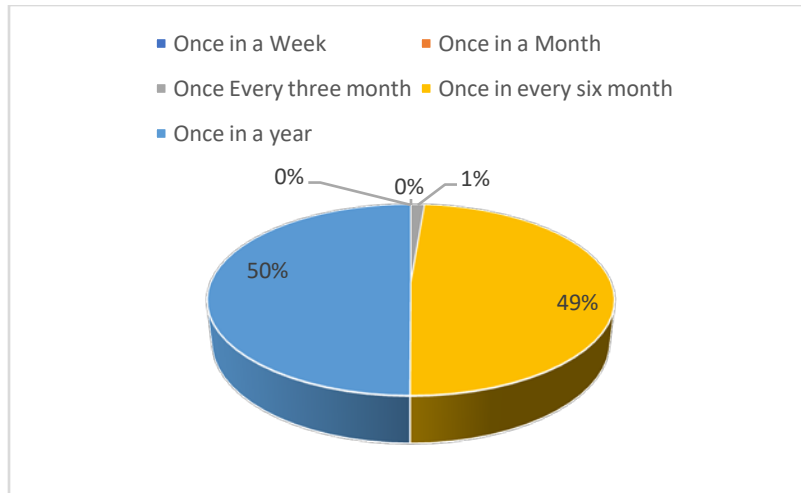


Figure 6.29 Frequency of citizens' visit for receiving information services from UDCs

According to data, people do not frequently visit the Union Digital Center to get information related services. Some of the respondents replied that-

“I do not need to come to Union Digital Center physically. I can avail myself of this type of information from social media like Facebook. If I fail to get the information, I have the number I can call him regarding the information related services”.

Based on FGD, most respondents agreed that they do not need to come physically to UDC to get service while service recipients have to visit UDC to get government service and commercial services. On the other hand, regarding information, they do not need to appear in person. And they barely need information service. One of the participants replied that-

“If I required any information relate to service, I can manage it or get from my son and neighbours”.

Among the three services (Governance service, Commercial service and Information service), people usually visit UDCs to avail themselves of government service. People frequently meet and communicate with the Union Digital Center entrepreneur. At the same time, in terms of commercial service, service recipients also visit UDC entrepreneurs physically.

6.4.7 Timeliness in service delivery

One of the primary purposes of digitalization is to reduce time and ensuring real-time service delivery. The service recipient was questioned regarding the time management of the service

delivery. Regarding the Government services, around 84% (83.8) of respondents replied that they received services ontime. At the same time, only 16.3% of respondents answered that they did not get their services ontime.

Table 6.24 Timeliness in service delivery from union Digital Centers (UDCs)

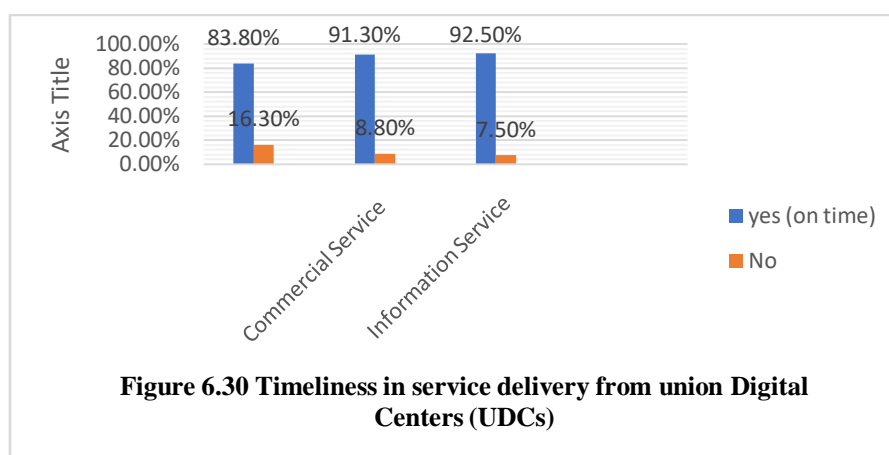
	Yes (on-time)	Percentage	No	Percentage
Government Service	67	83.8%	13	16.3%
Commercial Service	73	91.3%	07	8.8%
Information Service	74	92.5%	06	7.5%

Among 16.3% of the respondent, one of the respondents replied alleged that

“I applied for birth certificate and filling-up the application form; I had to come to the UDC entrepreneur eight times. Then I received my services”.

On the other hand, based on FGD, one of the entrepreneurs replied that the allegation was correct. But the main reason is, the servicer does not work correctly. Sometimes load shedding happens. At the same time, services are hampered due to frequent disruption in internet connectivity.

In terms of commercial services, almost 92% (91.3) respondents replied that they received their service on time. On the other hand, only 8.8% of respondents answered that they do not receive their services on time.



In terms of commercial service, it is clear that the service seeker gets their service on time. One of the entrepreneurs replied that I do not require any server service from the government for

providing the commercial service. While getting government services requires access to central service. At the same time, most people come to get a photocopy, printing, composing, internet browsing, etc. For getting these services, I do not need very high-speed internet. So, people get their services on time.

In terms of Information services, the majority of the respondent replied that they get their service on time. Only 7.5 % of respondents replied that they do not get their services on time. Among those who have replied negatively regarding the information service, one of the respondents alleged that “I asked him regarding some information on a passport application and school admission. But I did not receive any response”. On the other hand, based on FGD, the UDC entrepreneur disagrees with the statement of the service applicants. He claimed that-

“I always remain available at the UDC center, and my cell phone is always on. My phone is open for all. Sometimes I could not receive and stay in the UDC center because I have to go to the UNO office to meet. Or I have to talk to the chairman. I cannot receive a phone call or absent in the UDC center”.

Respondents were questioned regarding the timeliness in receiving service of UDC of government service, commercial service and information services. In terms of government services, around one fourth (23.8%) of respondents replied that the entrepreneur used to take three days and above to provide government services, while 30 % responded that it took 1 to 2 days to receive government services. On the other hand, 16.3% of respondents replied that they used to receive their services within 1 to 2 hours, while 7.5 % responded that they took 2 to 3 hours. However, 1.3 % of respondents alleged that it took 4 to 5 hours, while 15% answered that they had to invest only 30-60 minutes in receiving the services. At the same time, 6.3% of respondents replied that it took only less than 30 minutes to receive my required service. In combination, only more than one-fifth of the respondent get their service within one hour, while more than 47 % of respondents received their service within one day.

Table 6.25 Timeliness in receiving services of UDCs by the recipients

	Government Service		Commercial Service		Information Service	
	Number of respondents	Percentage	Number of respondents	Percentage	Number of respondents	Percentage
Less than 30 minutes	05	6.3%	36	45%	70	87.5%
30-60	12	15%	12	15%	01	1.3%

minutes						
1-2 hours	13	16.3%	16	20%	08	10%
2-3 hours	06	7.5%	06	7.5%	01	1.3%
4-5 hours	01	1.3%	00	00	00	00
1-2 days	24	30%	08	10%	00	00
3 days and above	19	23.8%	02	2.5%	00	00
Total	80	100%	80	100%	80	100%

Interms of commercial services, 45% of respondents replied that they had received their services within 30 minutes, while 15% answered that it took 30-60 minutes. At the same time, one fifth (1/5) of the respondent replied that entrepreneurs took 1-2 hours to provide their services, while 7.5% answered that they have to wait 2-3 hours. On the other hand, 10 % of respondents replied that they have to wait two days to get their services, while only 2.5% responded that the entrepreneur took three days and more.

Interms of information services, the majority of the respondent (8.5%) replied that they receive the information services in the shortest possible period, while 1.3 % of respondents replied it took 30-60 minutes. On the other hand, 10% of respondents replied that they have to wait 1-2 hours to take their service, while 1.3% responded that it took 2-3% replied that they have to wait for 2-3 hours to get their services. So, all of the respondents get their services in less than 3 hours.

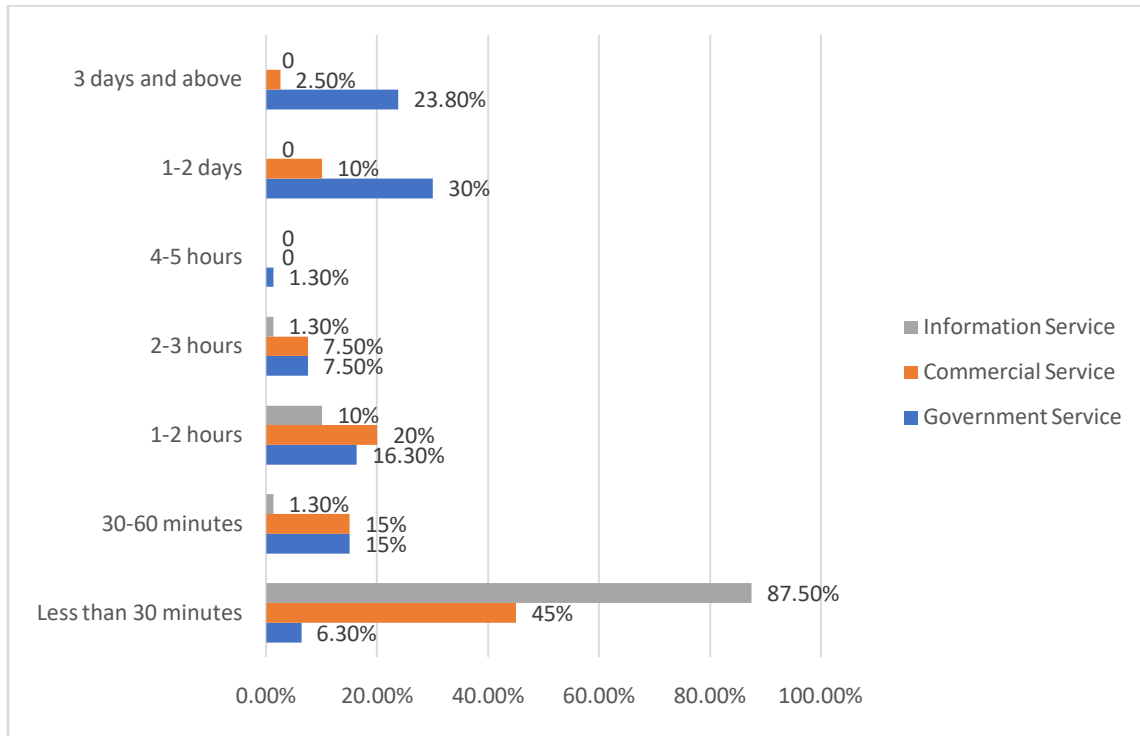


Figure 6.30 Timeliness in receiving services of UDCs by the recipients

The result is very impressive because the commercial service and information entrepreneurs took a short period to provide the commercial and information services. Usually, almost 90% of respondents stated that they got commercial services less than 3 hours while 100% replied that they got their service less than 3 hours. But in terms of government services, less than 50% of the respondent service recipients replied that they received their service less than 5 hours while 30% responded that it took 1-2 days. At the same time, around 24% of respondents replied they took three days and sometimes took more than three days. Regarding the government services, the entrepreneur alleged that

“We do not have any hand to provide the government service. It is dependent on government service access. If the government server works properly, we shall be able to apply, and the receiver shall get their service on time”.

6.4.8 Number of visits of the recipients to receive services from Union Digital Centers (UDCs)

The respondents were asked regarding the number of visits the recipients made to the Union Digital Center Centers. In terms of government services, the majority of the respondent (55%)

respondent replied that they had to visit 2-3 times to receive their government services, while around 23 % (22.5%) respondents answered that they have to go to 3-4 times to receive required services. On the other hand, about 18% (17.5%) are very optimistic that they have to go to UDC only once to get their service while only 5% alleged that they have to go to Union Digital Center 5 times, sometimes it took more than five times.

Table 6.26 Number of visits of the recipients to receive services from Union Digital Centers (UDCs)

	Government Service		Commercial Services		Information Services	
	Number of respondents	Percentage	Number of respondents	Percentage	Number of respondents	Percentage
1 time	14	17.5%	44	55%	63	78.8%
2-3 times	44	55%	25	31.3%	17	21.3%
3-5 times	18	22.5%	11	13.8%	00	00
5 and above	04	5%	00	00	00	00
Total	80	100%	80	100%	80	100%

Interms of commercial services, the respondents were asked regarding the number of visits of the recipients at the Union Digital Center. The majority of the respondent (55%) replied that they had to go to Union Digital Center to receive their required service, while around 32% (31.3%) respondent answered that they had to visit 2-3 times to get their commercial services. On the other hand, about 14% of service recipients replied that they had to go to Union Digital Center 3-5 times to receive their services. The majority do not need to go more than one time to get their services.

Interms of information service, the respondent was asked regarding the number of visits of the recipients from the Union Digital Center. The majority of the respondents (78.8%) replied that they had to go to UDC only once to receive their information service, while around 22% (21.3) respondents answered that they had to go to UDC entrepreneur 2-3 times to receive their information service. One of the respondents alleged that-

“I had to go to more than two times to get SSC mark sheet from UDC office. But I could not get it. But the entrepreneur alleged that “sometimes it takes some time, but most of the time people do not come to the office physically rather get their service over the phone”.

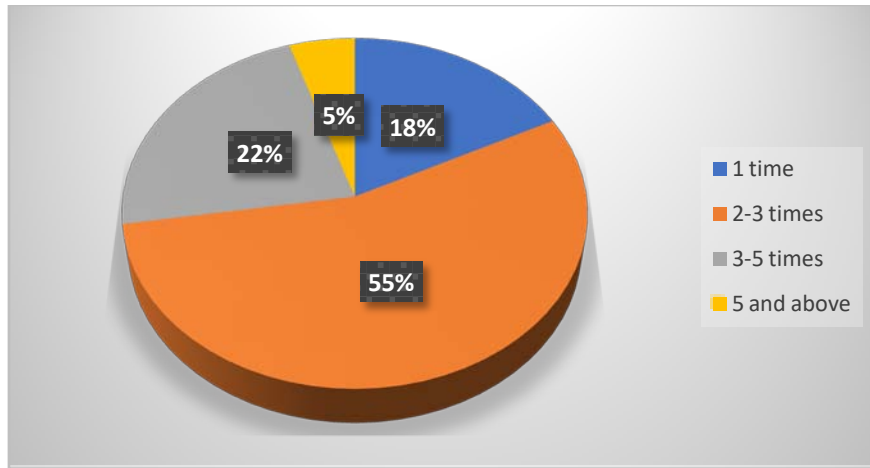


Figure 6.31 Number of visits of the recipients to receive government services

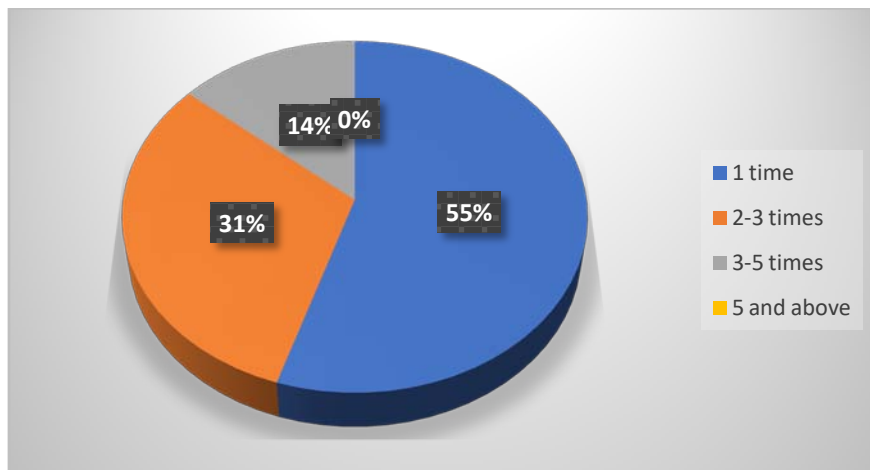


Figure 6.32 Number of visits of the recipients to receive commercial services

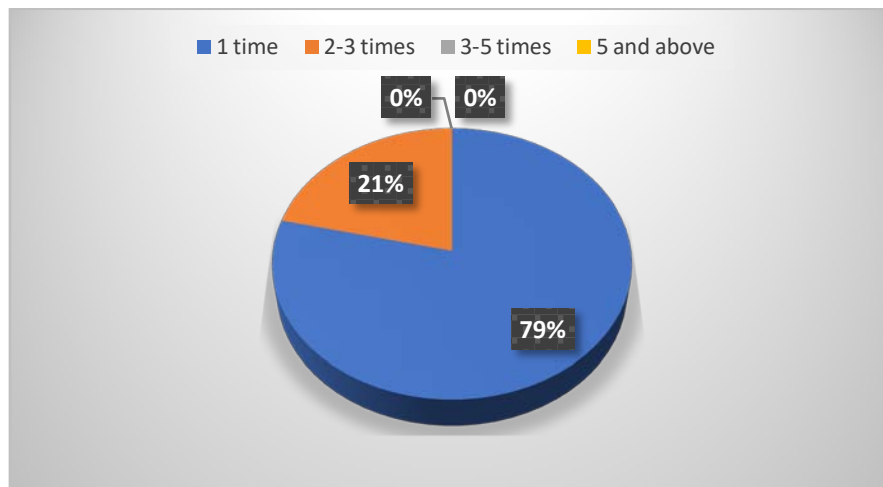


Figure 6.33 Number of visits of the recipients to receive information services

6.4.9 Cost of service received from UDCs

The respondents were asked regarding the cost of government services borne by the recipients from the Union Digital Center. In terms of government services, the majority of the respondent, 30%, replied that they have to spend a minimum of 100 takas, and sometimes more than 100 takas to receive the government service, while around 29% (28.8) answered that they have to pay 50-75 taka to receive the service. At the same time, 11.3% of respondents answered that they did not need to pay any single amount of money to get their service, while around 14% (13.8%) of respondents answered that they paid only 5-25 taka. On the other hand, 11.3% of respondents replied that they had to pay 25-50 taka, while only 5% of respondents alleged that they had to pay 75-100 taka to get the government services.

Table 6.27 Cost of government services provided by Union Digital Center

	Number of respondents	Percentage
Free of Cost	09	11.3
5- 25 taka	11	13.8
25-50 taka	09	11.3
50-75 taka	23	28.8
75-100 taka	4	5.0
100 and Above taka	24	30.0
Total	80	100

The entrepreneurs regarded the free services. One of the entrepreneurs alleged that

“Some of the respondents come to the Union Digital Center to get government service without any cost”.

On the other hand, one of the service recipients also said that

“I have taken a birth certificate from the Union digital Center, but I did not pay any money”. Based on FGD, some local politicians and influential people do not go to the UDC center, and they sent someone without any money.”

In the case of government services, money is not a matter of concern. Instead, receiving service is highly important. As a result, (Pearson) correlation was conducted that shows a value which is .183. This value means no correlation between satisfaction and money paid for receiving services (See annex 7.4.1.2).

**Table 6.28 Cost of commercial services provided by Union
Digital Center**

	Number of respondents	Percentage
Free of Cost	00	00
5- 25 taka	30	37.5%
25-50 taka	26	32.5%
50-75 taka	08	10%
75-100 taka	08	10%
100 and Above taka	08	10%
Total	80	100

The respondents were asked regarding the cost of commercial services for the recipients from the Union Digital Center. In terms of commercial services, the majority of the respondent (37.5%) replied that they have to pay 5-25 taka to receive commercial services, while 32.5% of respondents answered that they spent 25-50% taka. On the other hand, 10 % of service recipients paid 50-75 taka and 75-100 taka, respectively, while another 10% answered that they received their service by paying 100 taka and sometimes had to pay more than 100 taka.

**Table 6.29 Cost of information services provided by Union
Digital Center**

	Number of respondents	Percentage
Free of Cost	64	80%
5- 25 taka	16	20%
25-50 taka	00	00
50-75 taka	00	00
75-100 taka	00	00
100 and Above taka	00	00
Total	80	100

The respondents were asked regarding the cost of information services the recipients from the Union Digital Center. In terms of commercial services, the majority of the respondent (80%) replied that they did not need to pay any money. On the other hand, the rest of the 20% of service recipients answered that they had to pay 5-25 taka. The service recipient was asked why they have to pay 5-25 taka to receive information service. They answered that-

“I went there to get the SSC result of my son, then I had to make a print copy. That’s why I had to pay”.

6.4.10 Problems faced by recipients while receiving government services

The respondents were asked regarding the problems while receiving government services the recipients from the Union Digital Center. In terms of government services, most respondents (88.8%) of government service recipients replied that they do not face any problem, while 11.3% answered that they face some difficulties. In terms of Commercial service, 73.8% of respondent answered that they do not face any challenges while receiving. On the other hand, more than one-fourth (26.3%) of respondents answered that they face some problems. In terms of information service, more than 76.3% of respondents answered that they do not face any issue while receiving assistance. On the other hand, around 24% (23.8%) alleged that they face some problems.

Table 6.30 Problems faced by recipients while receiving government services

	Yes	No
<i>Government Services</i>	11.3%	88.8%
<i>Commercial Services</i>	26.3%	73.8%
<i>Information Services</i>	23.8%	76.3%

Based on FGD, the entrepreneur and recipients were asked regarding problems with the services. One of the FGD participants (Regarding Government service) alleged that

“Most of the complaint comes from the birth registration and passport application fill-up issues. While I start to fill in the form, I do not have any power. If all the server works properly, I can fill in application forms and submit as well. But if the server does not work properly, what I am supposed to do”.

In terms of commercial services, another respondent stated that

“Most people come to me to make a photocopy, but the UDC photocopier has been dead for the last four years. If I use my printer, the cost is high in comparison to the photocopy machine. If I charge more money, the service recipient will not accept the higher charge. At the same time, my internet is not working properly, and it's significantly expensive since I do not have access to broadband internet”.

6.4.11 Distance between Union Digital Center & service recipients' home and its impact on services

The respondents were asked regarding the problems while receiving government service from the Union Digital Center. For the Government services, the majority of the respondent (43.8%) replied that their home is situated within 2-3 kilometres from the UDC. 22.5% of respondents answered that within 1-2 kilometres.

Table 6.31 Distance between UDC & service recipients' home and its impact on government services

	<i>Number of service recipients</i>	<i>Percentage</i>
<i>Within 1-2 km</i>	18	22.5%
<i>Within 2-3 km</i>	35	43.8%
<i>Within 3-4km</i>	17	21.3%
<i>Within 4-5 km</i>	06	7.5%
<i>Within 5-6 km</i>	04	5%
<i>Total</i>	80	100%

At the same time, 21.3% of respondents answered that their home is situated within 3-4 kilometers. On the other hand, 7.5% replied that they have to travel 3-4 kilometers, while only 5% of service recipients answered that they have to travel 5-6 kilometers to receive their service. As it is government service, service recipients must come to the UDC in person, and 21.3% of service recipients had to travel 3-4 kilometers.

Table 6.32 Distance between UDC & service recipients' home and its impact on commercial services

	<i>Number of service recipients</i>	<i>Percentage</i>
<i>1-2 km</i>	11	13.8%
<i>2-3 km</i>	55	68.8%
<i>3-4km</i>	14	17.5%
<i>4-5 km</i>	00	00
<i>5-6 km</i>	00	00
<i>Total</i>	80	100%

The respondents were asked regarding the problems while receiving commercial service from the Union Digital Center. In terms of government services, the majority of the respondent (68.8%) respondents answered that they had to travel 2-3 kilometers while 17.5% responded that within 3-4 kilometers.

On the other hand, 13.8% of respondents had to travel 1-2 kilometers to take the commercial services. In the commercial services, those living too far away from the UDCs, are not endorsed to go to UDC. They prefer to avail commercial services from the near local computer and photocopier shop. Another respondent replied that-

“I had to travel from 5 kilometers, but I came here to do my banking activities. This is because here I can withdraw money from the agent banking service”.

Table 6.33 Distance between UDC & service recipients’ home and its impact on information services

	<i>Number of service recipients</i>	<i>Percentage</i>
<i>1-2 km</i>	12	15%
<i>2-3 km</i>	40	50%
<i>3-4km</i>	22	27.5%
<i>4-5 km</i>	06	7.5%
<i>5-6 km</i>	00	00
<i>Total</i>	80	100%

The respondents were asked regarding the problems while receiving information service from the Union Digital Center. Half of the respondents (50%) answered that they had to travel 2-3 KM, while 27.5% travelled 3-4 KM. At the same time, 15% of respondents answered that they had to travel only 1-2 kilometers to get their services, while only 7.5% of respondents had to travel 4-5 kilometers. Although the respondent is living too far away in terms of information services, they had to come to UDC because of Trust. One of the service respondents replied that,

“I believe that UDC is part of the government. Although I live 5 kilometers far away, I had to come to know the TR, KABIKHA etc., they are trustworthy to us to provide this type of information”.

6.4.12 Transportation cost of receiving services

The respondents were asked regarding the transportation cost while receiving government service from the Union Digital Center. In- terms of government services, most respondents, 50%, had to spend 20-30 taka, while 23.8 % of respondents replied that only 10-20 taka. At the same

time, 15% of respondents answered that they had to spend 30-40 taka. On the other hand, 7.5% replied that they did not need to spend any money

Table 6.34 Transportation cost of receiving government services

<i>Cost</i>	<i>Number of service recipients</i>	<i>Percentage</i>
Free of cost	16	20%
10-20 taka	09	11.25%
20-30 taka	40	50%
30-40 taka	12	15%
40-50 taka	01	1.3%
50 and above	02	2.5%
Total	80	100.0

Table 6.35 Transportation cost of receiving government services

Mode of transportation	Number of service recipients	Percentage
on foot	05	6.3%
bicycle	11	13.8%
by rickshaw	18	22.5%
by auto	44	55%
motor cycle	02	2.5%
Total	80	100%

Respondents were asked regarding the mode of transportation. Most of the respondents, 55%, replied that they used Auto Rickshaw to visit the UDC, while 22.5% responded by rickshaw. On the other hand, 13.8 % of respondents used their bicycles. At the same time, 6.3% did not need to pay any money. On the other hand, a very small number 2.5 % respondents replied that they used the motor cycle.

Table 6.36 Transportation cost of receiving commercial services

Transportation cost	Number of service recipients	Percentage
Free of cost	12	15%
10-20 taka	30	37.5%
20-30 taka	38	47.5%
30-40 taka	00	00
40-50 taka	00	00
50 and above	00	00
Total	80	100%

The respondents were asked regarding the transportation service while receiving commercial service from the Union Digital Center. 15% of respondents do not need to pay any money, while 47.5 % answered that they spent 20-30 taka. On the other hand, 37.5% replied that they spend 10-20 taka.

Table 6.37 Mode of transportation while receiving commercial services

Mode of transportation	Number of service recipients	Percentage
on foot	11	13.8%
bicycle	02	2.5%
by rickshaw	30	37.5%
by auto	37	46.3%
motor cycle	00	00
Total	80	100%

On the other hand, 46.3% of respondents answered that they use Auto Rickshaw, while 37.5% of respondents used rickshaws. On the other hand, 13.8% of respondents do not use any modes of transportation, and 2.5 % use their bicycles.

Table 6.38 Transportation cost of receiving information services

Transportation cost	Number of service recipients	Percentage
Free of cost	13	16.3%
10-20 taka	43	53.8%
20-30 taka	24	30%
30-40 taka	00	00
40-50 taka	00	00
50 and above	00	00
Total	80	100%

The respondents were asked regarding the transportation cost while receiving information service from the Union Digital Center. The majority of the respondent (53.8%) answered that they spend 10-20 taka as travel cost while 30% replied 20-30 taka. On the other hand, 16.3% of respondents replied that they did not need to spend any money.

Table 6.39 Mode of transportation while receiving information services

Mode of transportation	Number of service recipients	Percentage
on foot	10	12.5%
Bicycle	02	2.5%
by rickshaw	12	15%
by auto	56	70%
motor cycle	00	00
Total	80	100%

The respondents were asked regarding the transportation cost while receiving information service from the Union Digital Center majority of the respondent (70%) used Auto Rickshaw, while 15% replied that they used rickshaw. At the same time, 12.5% responded answered that they did not need to spend any money.

6.4.13 Positive Outcome of services offered by Union Digital Center

Table 6.40 Positive Outcome of government services offered by Union Digital Center

Positive Outcome	Number of responses	Percentage
Saving time	19	23.8%
reducing hassle	19	23.8%
reducing cost	12	15%
easy access to information	17	21.3%
faster communication	05	6.3%
meeting up needs speedily	08	10%
Total	80	100%

The respondents were asked regarding the Positive Outcome of government services offered by Union Digital Center. Around 24% (23.8%) of respondents answered that UDC helped save time and reduce the hassle while receiving assistance. 21.3% of respondents answered that it reduces their overall cost, while 15% of respondents stated that it reduces the overall cost of the recipients.

Table 6.41 Positive Outcome of commercial services offered by Union Digital Center

Positive Outcome	Number of responses	Percentage
Saving time	20	25%
reducing hassle	26	32.5%
reducing cost	07	8.8%
easy access to information	12	15%
faster communication	13	16.3%
meeting up needs speedily	02	2.5%
Total	80	100%

The respondents were asked regarding the Positive Outcome of commercial services offered by Union Digital Center. 32.5% of respondents replied that it reduces their hassle, while others (25%) answered that UDC saves their valuable time. At the same time, 16.3% replied that it makes the service faster, while 8.8% replied that it reduces overall cost. On the other hand, 15% said that UDC facilitates easy access to information, while 2.5% replied that UDCs has made the service speedier.

Table 6.42 Positive Outcome of information services offered by Union Digital Center

Positive Outcome	Number of responses	Percentage
Saving time	24	30%
reducing hassle	15	18.8%
reducing cost	17	21.3%
easy access to information	11	13.8%
faster communication	10	12.5%
meeting up needs speedily	03	3.8%
Total	80	100%

The respondents were asked regarding the Positive Outcome of commercial services offered by Union Digital Center 21.3% of respondents replied that it reduces the overall cost of the services, while 30% of respondents answered that it saves our time. 18.8% respondent answered that it reduces the overall hassle of the service while 13.8% replied that it makes information accessible more manageable and 12.5% replied it make faster communication.

6.4.14 Relation between Chairman and UDC entrepreneur and its impact on service delivery

The respondents were asked about their perception of the relationship between the chairman and the UDC entrepreneur. Whether Union Parishad chairman or UDC entrepreneur have influences on service delivery or not. In terms of government service, 82.5% of respondents replied that they have strong relation while 17.5% of respondents replayed that they do not have any relation at all

Table 6.43 Perception of service recipients regarding the relation between Chairman and UDC entrepreneur

	Yes	Number of service recipients	No	Number of service recipients
Government Service	82.5%	66	17.5%	14
Commercial Services	62.5%	50	37.5%	30
Information Services	80%	64	20%	16

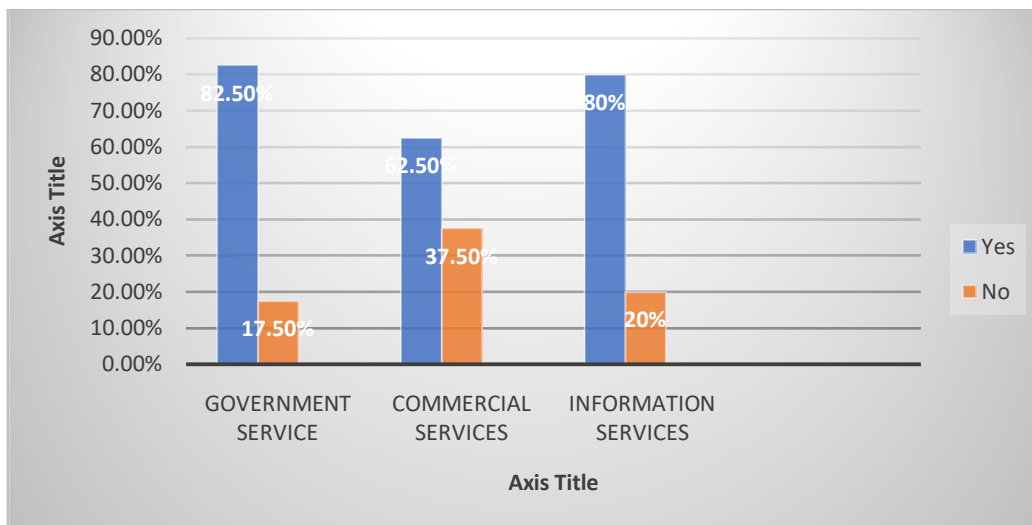


Figure 6.34 Perception of service recipients regarding relation between Chairman and UDC entrepreneur

In terms of commercial services, 62.5% of respondents replied positively that they have a relation with service delivery, while 37.5% replied that they do not have any connections. At the same time, 80 % of respondents answered that they have a relationship with service delivery regarding information service, while 20 % do not agree with the statement.

6.4.15 The political affiliation of UDC entrepreneurs and its impact on services of UDCs

The respondents were asked regarding the political affiliation of UDC entrepreneurs and their impacts. The respondents were asked that whether the entrepreneur have any political affiliation or not. 12% of respondents said they do have certainly expressed or implied relationships with political parties, while 88% responded with no relation with the political party.

Table 6.44 The political affiliation of UDC entrepreneurs and its impact on services of UDCs

	Number of service recipients	Yes	Number of service recipients	No
Government Service	10	12%	70	88%
Commercial Services	45	56.3%	35	43.8%
Information Services	56	70.0%	24	30.0%

56.3% of respondents alleged that they have political affiliation in terms of commercial services, while 43.8 % replied that they do not have any relationship. In terms of information services, 70% of respondents answered that they have political affiliation, while 30% responded that they do not have any political affiliation. UDC entrepreneurs do not have any political affiliation in government service, while the other two services, commercial and information service, have a political affiliation.

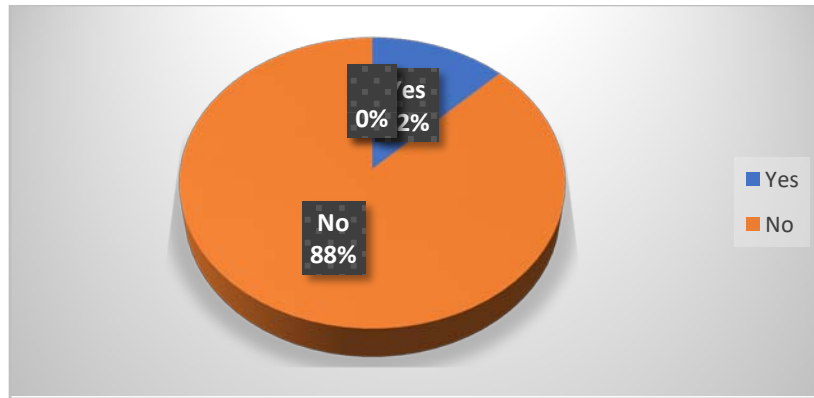


Figure 6.35 Perception of government service recipients' regarding political affiliation of UDC entrepreneur

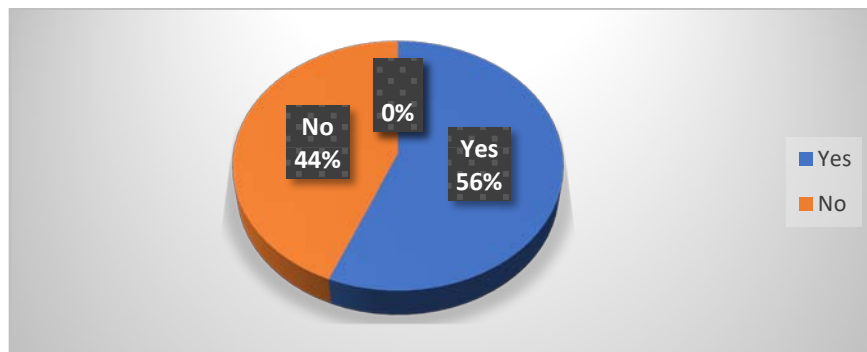


Figure 6.36 Perception of commercial service recipients' regarding political affiliation of UDC entrepreneur

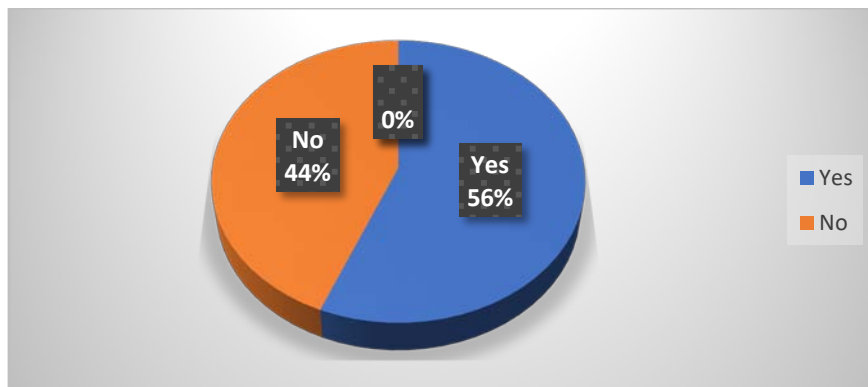


Figure 6.37 Perception of information service recipients' regarding political affiliation of UDC entrepreneur

6.5 Environmental Dynamics and its impact on UDCs' services

6.5.1 Political factors

- The decision-making power of UDC entrepreneur

UDC entrepreneurs are key figures in every Union Digital Center. So, they must hold a significant role in the decision-making process. Entrepreneurs were asked to what extent they exercise power in decision-making in respective UDC.

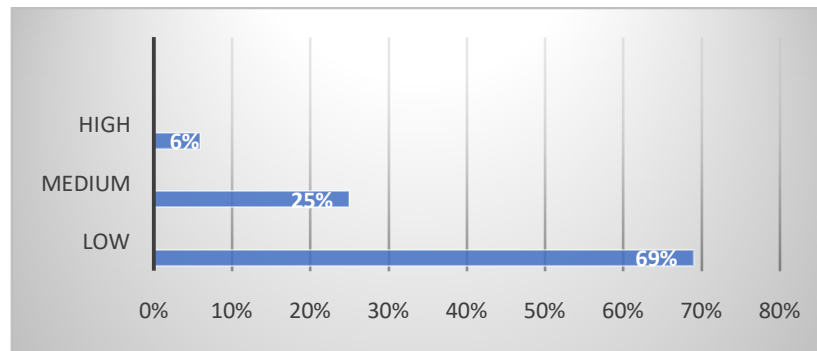


Figure 6.38 Decision making power of UDC entrepreneur

Chart 8.11 shows that 69% of entrepreneurs have low power in decision making. According to them, Chairman is a highly influential person in every activity. Apart from that, they have to depend on the Chairman of Union Parishad for funds. Sometimes, they do free data entry tasks on behalf of the Union Parishad. Some entrepreneurs are compelling in the decision-making processes as they belong to Chairman or have an attachment to the ruling government. As a result, UDC cannot operate freely due to being subservient to various actors.

One entrepreneur claimed in this way:

We are not considered an integral part of the decision-making process relating to Union Digital center. Most of the times the Chairman of Union Parishad take decision singlehandedly. We have lots of issues that need to be discussed with the Chairman. But, we hardly get the opportunity to get engaged in the decision-making processes. Sometimes, we need the budget and various types of support from Union Parishad. Union Parishad provides the budget for our help, but it is a sporadic case. Some instruments need to repair, but the budget is not readily available. Regarding these issues, entrepreneurs do not have the power to talk with Chairman.

One entrepreneur claimed differently:

Under the dynamic leadership of the UP Chairman, I have access to be engaged in the decision-making process. The Chairman of Union Parishad frequently talks to the entrepreneurs to know if they have any opinions, feedback, and suggestion. Due to the cooperative approach in the decision-making process. This union is the best one in the Rajshahi Division in Bangladesh. Entrepreneurs have the opportunity to share if any service is required.

6.5.2 Influence of external actors

There are a lot of actors who influences the functioning of the union digital center internally. In the case of external actors, half of the Chairman agreed that external factors affect UDC's function. In addition, more than one and a half of UDC entrepreneurs are informed about the influence of external actors. It means there are severe influences of external actors in the operational process of union digital centers.

Table 6.44 Chairman and UDC entrepreneurs' view regarding external actors' influence on UDCs' functions

		External actors' influence on UDC function					
		Chairman		Number of Respondents		UDC entrepreneurs	
Influence of External Actors	Yes	50%	16	Yes	81%	16	
	No	50%		No	19%		

On the other hand, all the entrepreneurs admitted only political parties over UDC's functions. More than half of UP Chairman (62.5%) agreed with the influence of political parties. Similarly, 63% of entrepreneurs believe in the very strong influence of external actors.

Table 6.45 Percentage of External Actors' influence on UDCs' functions

	Influence of External Actors		
	Political parties	Community-based organization (CBO)	Community people
Chairman	62.5%	25%	12.5%
UDC entrepreneur	100%	00	00
Total	---	---	---

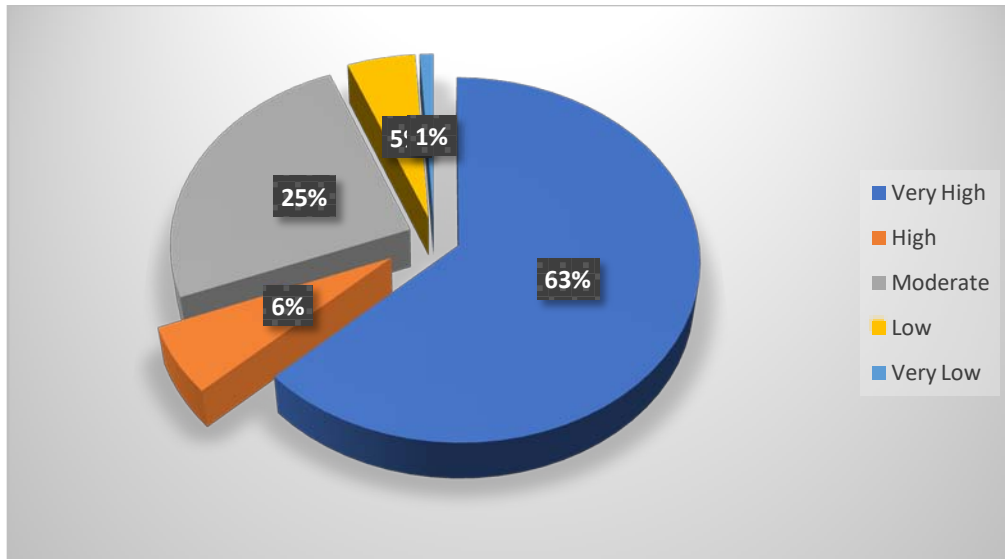


Figure 6.39 Measurement of External Actors' Influence

More than one-third of the UP Chairman and more than 50% of UDC entrepreneurs disagreed with the influence of external actors. This influence has a negative impact on UDC's function. So, this external influence is undermining the service delivery process at union digital centers.

Table 6.46 Opinion of Chairman and UDC entrepreneurs whether they agree or disagree with the influence of external actors		
	<i>External Actors' influence</i>	
	Agree	Disagree
<i>Chairman</i>	12%	88%
<i>UDC entrepreneurs</i>	37%	63%

In the opinion of experts, it is found that-

“Local politics influences the functioning of Union Digital Centers. Sometimes, the ruling party attempts to take advantage of the union digital center regarding service delivery. UDC entrepreneurs sometimes cannot charge a service fee for service delivery.”

Based on the response from UP chairman and entrepreneurs, the nature of influence is like that-

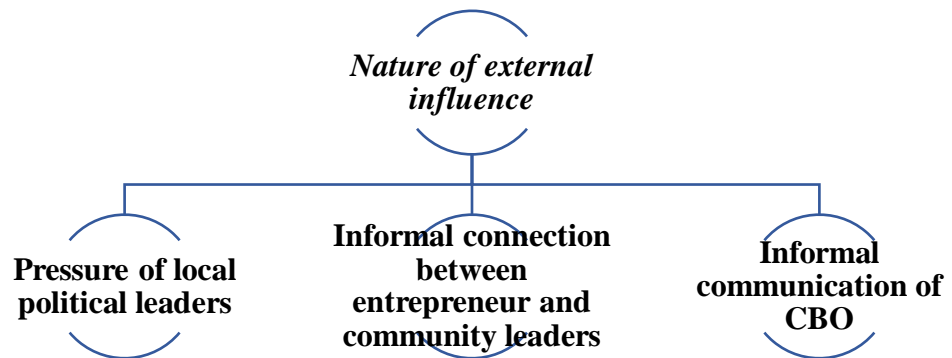


Figure 6.40 Nature of external actors' influence

6.5.3 Bureaucratic and administrative factors

- Influence of actors on UDC's functions

There are a lot of actors who influences the functions of the union digital center internally. In this study, UP Chairman and UDC entrepreneurs have shared their opinion regarding actors' influence. They have a different view regarding the influence (see Table 1.3) where all the Chairmen admitted internal actors who influence the UDC's function. In contrast, more than one and a half of UDC entrepreneurs believe in the influence of internal actors. Rest 19% of UDC entrepreneurs are not well aware of the influence of internal actors. It means either they are not well informed about the role of internal actors, or the actors are not influencing their role on UDC's functioning.

Table 6.47 Chairman and UDC entrepreneurs' view regarding Internal actors' influence on UDCs' functions

	Internal actors' influence on UDC function					
		Chairman	Number of Respondents		UDC entrepreneur	Number of Respondents
Influence of Internal Actors	Yes	100%	16	Yes	81%	16
	No	00		No	19%	

Internal actors involve government, UNO, and Union Chairman and external actors, including political parties, community-based organisations, and Community People. In the survey, Chairmen and Union Entrepreneurs were interviewed to know to what extent internal and external actors influence on UDCs' functioning.

Table 6.48 Percentage of Internal Actors' influence on UDCs' functions

	Number of Respondents	Influence of Internal Actors		
		Government	UNO	Union Chairman
Chairman	16	13%	87%	00
UDC entrepreneur	16	37.5%	62.5%	00
Total	32	---	---	---

The chairmen (87%) and UDC (62.5%) entrepreneurs both have mentioned the influence of Upazila Nirbahi Officer (UNO). From table 1.4, it is found that Union Chairman has no internal role in influencing UDC's function. So, only UNO has more power, and s/he can influence the UDC's functions. UDC entrepreneurs have admitted the influence of both government (A2I) and Upazila Nirbahi Officer (UNO).

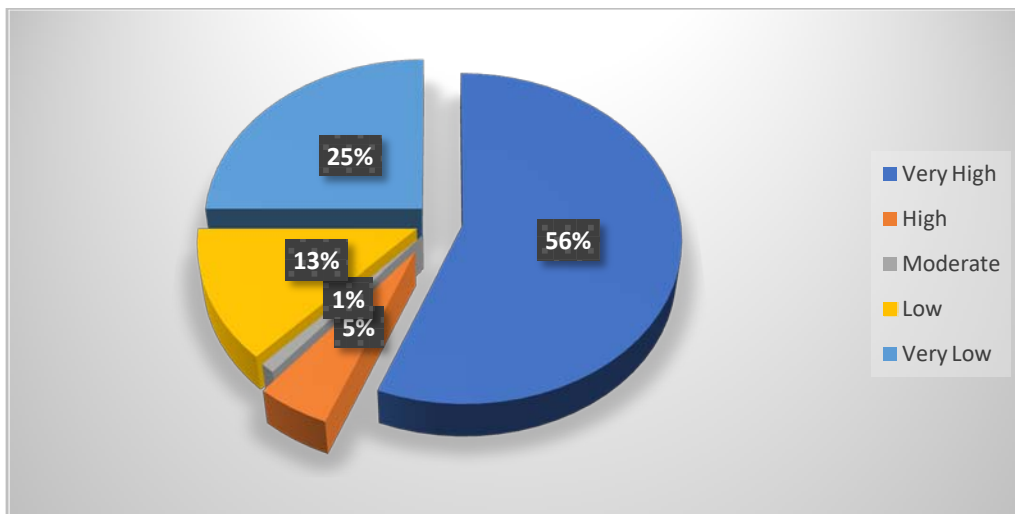


Figure 6.41 Measurement of Internal Actors' Influence

Now, it is crucial to measure the influence of internal actors (see Chart 1.4). While interviewing UDC entrepreneurs, 56% of entrepreneurs stated that they believe in the very strong influence of internal actors.

Table 6.49 Opinion of Chairman and UDC entrepreneurs whether they agree or disagree with the influence of internal actors		
	<i>Internal Actors' influence</i>	
	Agree	Disagree
<i>Chairman</i>	100%	00%
<i>UDC entrepreneurs</i>	100%	00%

The influence is the common matter at union digital centers at the local level. In this study, Chairman and UDC entrepreneurs were asked whether they agree or disagree with the influence. According to UP chairman and UDC entrepreneurs (see Table 1.5), internal influence is significant to run the smooth functioning of the union digital center. Based on the response from UP chairman and entrepreneurs, the nature of influence is like that-

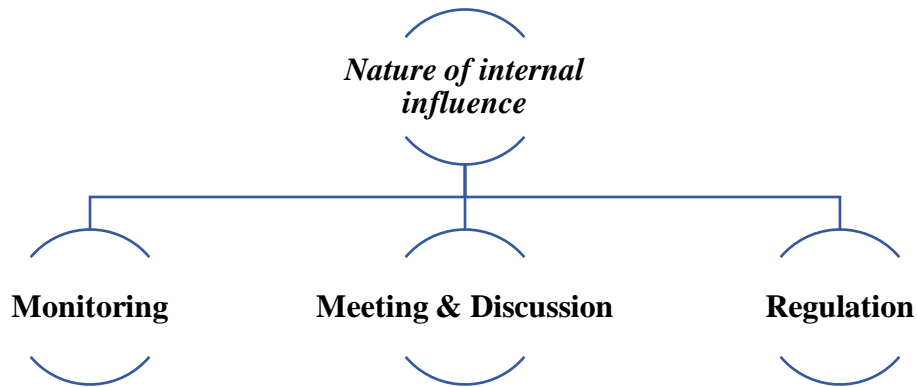


Figure 6.42 Nature of internal actors' influence

6.5.4 Socio-economic factors

The Study covers 16 Union Digital Centers under 8 Upazilas of 4 District in Bangladesh, Brahmanbaria, Bogura, Sylhet, & Dhaka. Among these UDCS, some are located at the rural level, and the UDCs are located in urban areas.

Table 6.50 List of Union Digital Centers

No	District	Upazila	Union
1	Brahmanbaria	Nabinagar	Barikandi
			Salimgang
		Bancharampur	Tejkhali
			Dorikandi
2	Bogura	Sherpur	Garidah
			khamarkandi
		BoguraSadar	Lahiripara
			Fapor
3	Sylhet	Sylhet Sadar	Kandigaon
			Mollargaon
		Dakshin Surma	Baraikandi
			Tuker Bazar
4	Dhaka	Savar	Teghora
			Konda
		Keraniganj	Six no Birulia
			Seven no savar

The government established UDCs as One Stop Shop so that citizens do not require going beyond 2 kilometres from their home for receiving services (TIB 2017). The survey finds that 50% UDCs are located adjacent to the local market. 25% UDCs are located within 1km of the service recipient’s place of living. Here, citizens frequently come to receive services. On the other hand, the entrepreneurs have also been facing severe competition. It has been challenging for them to survive with the existing competition of private businesses. The rest, 25% UDCs, are located within 2-3km/4-5km. In that case, citizens do not come to union digital centers frequently. They only come to UDCs to receive government services since they go to the local market to receive commercial and information services. As a result, the performances of UDCs located in rural areas have been facing series of challenges in service delivery.

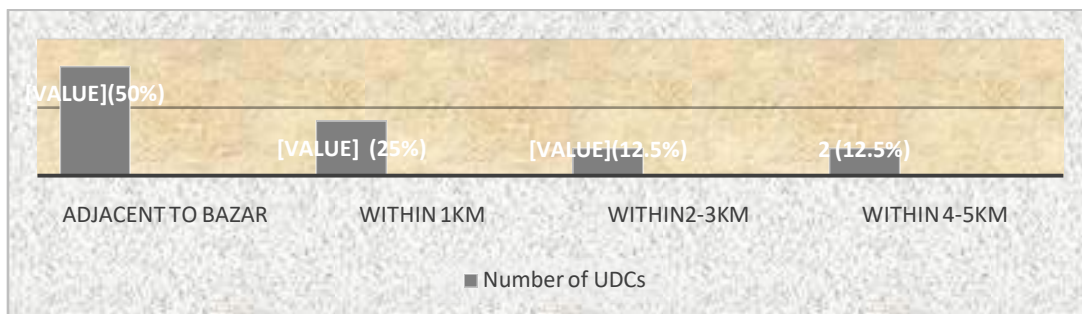


Figure 6.43 Distance of UDCs from Local Growth Center

Part B: Potentials and challenges of Union Digital Centers in Bangladesh

6.6 Potentials

- **The catalyst for establishing digital Bangladesh in the rural area**

When Bangladesh Awami League took power in 2009, the Awami League government started to transform the stereotype administration into digital administration, and they wanted to disseminate the government service all over Bangladesh. But it was not too easy to expand the service in the rural area and make the services very easy and close to doorsteps among the rural people. From that time, the UDCs have started playing a vital role in ensuring widespread e-service all over Bangladesh, especially for the rural poor people. The UDC brings a new revolution in the rural area in terms of public service delivery mechanisms.

- **Service process simplification in the rural area**

Government services are simplified in rural areas. Before 2009, the government incorporated not only public services but also private services in remote areas. Previously, some private services like agent banking, photocopy, typing printing, e-mailing and video chatting were not available in the rural area but are presently available in the rural area through UDCs. Even the international call was significantly expensive for those who used to communicate with the friends and families living abroad. But now, it is very easy and cheap to communicate through video chat and live video communication with the support of UDC.

- **Doorstep service in the rural area**

UDC makes the services very easy and reaches door steps. Usually, the UDC is situated within the 4/5-kilometer radius. As a result, it is very easy to reach the UDC and get their desired services from the UDC. One of the service recipients responded that

“I was very worried because I could not prepare my passport as I do not have any birth certificate. That time I went to the UDC office and took help from the UDC entrepreneur to fill in my application with a lump sum amount of money.

Another respondent, a student, respondent that

“I need a piece of information regarding a job examination. But I could not find it. I was apprehensive regarding my job examination and called UDC entrepreneur immediately.

He replied very swiftly and searched in the computer and informed me the seating plan, center of the examination, and date of the examination”.

- **Reduce the workload of union Parishad secretary**

Union is the last tier of the local government. Before 2009, the Union used to provide different services. However, local people were not very satisfied with the activities of the union secretary. When UDC was formed, many activities and services were started to be provided by the UDC entrepreneur.

- **Skilled human resources**

Most of the UDCs are managed with skilled and educated human resources. The majority of the UDC entrepreneurs are graduates with diversified backgrounds. As most entrepreneurs have been working for a long time, it helps them create some essential skills regarding their job. One of the service recipients opined that

“They are very good at using the computer like typing, form fills up, internet browsing, form fill-in for a birth certificate, registration for a passport.”

Another respondent alleged that

“I used to visit my school to get exam-related information, my result. Even I had to travel 4/5 kilometres to receive my mark sheet. But right now, I do not need to visit my sister's school to get her mark sheet. The UDC and the entrepreneur are making my task relatively easy. He is always helping to get the education-related information from time to time.

- **Organizational setup**

Organizational setup is very crucial to run any business. All of the UDCs has a physical appearance. There is a human resource setup as well. All the Union Digital Center has one male entrepreneur and one female entrepreneur. They have everything to continue their business efficiently. Even some of the entrepreneurs are operating their businesses in different places under the banner of A2I. One of the respondents of the Bogura Union Digital Center, Bogura District, has described that

“In our UDC center, my female entrepreneur and I are working as like our own office. We usually come here at 9 am and remain till 5 pm.

Some of the service recipients opined that the respondent-

“They use to stay in the UDC center. They are very friendly and cordial. This center is working very well. I have taken many services like opening a bank account, e-mail, and video chat with my husband, who lives abroad. He also helps me to fill in my son’s birth certificate application”.

- **Monitoring system**

The monitoring system is one of the fundamental mechanisms to make sure the services among the people. If there is no monitoring mechanism in an institution, the concerned institution becomes more disruptive in service and user fees. There is a monitoring mechanism to monitor the UDC activities under which they are being monitored by the local elected representative and UNO and A2I. Sometimes UNO calls coordination meetings to receive up-to-date information. They have to submit their daily activities information like income and the number of the service recipients.

One of the respondents described that

“We are very monitored by the authority differently. First of all, I have to prepare a synopsis of what I did today. And then, I have to submit the synopsis of the information. At the same time, sometimes the chairman also monitors the functioning of the UDC”.

- **Logistic support**

From the beginning of the UDC, the government has allocated computer and computer accessories for all of the UDCs. The government has provided many supplements, including a computer, printer, photocopier, and internet without being charged.

- **Congenial relation with the chairman and Upazila Nirbahi Officer (UNO)**

UNO used to call the meeting to take updates regarding the information on the service provided. It creates an excellent relation between UNO and UDC entrepreneurs. At the same time, as a UDC entrepreneur is working in the constituency of the Union Parishad, they have to make excellent relations with the union Parishad chairman. Even, there exists good coordination among UNO, Union chairman, and Entrepreneur.

- **Information Sharing and Participation meeting with Upazila Nirbahi Officer and Chairman**

As they have been monitored by the UNO and Union Chairman, they share their ideas and problems with the local people. One of the Union Parishad elected chairman responded that

“We have excellent relations with the Entrepreneur. He used to come to me to talk about different issues. Even he does not need to pay any electricity bill or internet bill. At the same time, I also seek a lot of help from him and assign him different activities”.

- **Extensive Network among UDC entrepreneur**

The network is one of the powerful tools or mechanisms to create pressure to fulfil the demand. The UDC entrepreneur took this advantage to meet their differentiated demands. There is a strong network among all of the UDC entrepreneurs of Bangladesh. At present, they are working to fulfil their need. One of the UDC entrepreneurs responded that

“We have been fighting together and continue pressuring the DC and government to recruit us as the computer operator in the Union Parishad Office. Even we as a group filed a case against the DC to establish our demand”.

- **Skilled entrepreneur**

They are providing the computer training facilities in the UDC. The beneficiary has stated that

“I have taken training from the UDC center, and right now, I have opened a small shop in the local bazaar and earning a handsome amount of money.”

- **Employment opportunities**

UDCs have created employment opportunities at the local level in Bangladesh. Due to widespread service delivery functions, more than one UDC is being established in some unions. As a result, more than one male and female entrepreneur is getting an appointment. Thus, employment opportunity is being expanded gradually.

- **Agent of digital service**

UDCs are nowadays playing the role of an agent of the government to expand digital services among the citizens, including government, commercial, and information services. It helps to implement the government vision that was to make a digitalized country as well.

- **Public Service providing Hub**

Union Digital center has been considered a public service delivery Hub in a rural area where many public services are not readily available. One of the service recipients demonstrated that

“When I was young, I had to go to Upazila to open a bank account. It used to kill my time, and sometimes I had to wait until evening, which would take my whole day. But right now, I can open my bank account and withdraw money through agent banking based on the Union Digital Center”.

Another service recipient has described that

“I have passed SSC and HSC in 2005 and 2007, respectively. I had to go to Upazila Headquarters to collect my mark sheet. Last year, my brother passed the SSC examination, but he did not need to go to school or wait. As soon as a result was published, he went to the Union Digital center and received his mark sheet as printed form”.

Another job holder respondent that

“I had to go to Sonali bank to deposit money to collect the government job application form. Then I had to fill in that form, and again I had to go to a bank to submit my job application. But right now, it is very easy. Those are job seekers; they do not need to do a lot of activities. Just go to UDC and ask for help from the UDC entrepreneur; they will do everything in the shortest period. At the same time, we, the job seeker, used to collect newspapers to search the job circular, but at present, they do not need to search daily newspapers and weekly job-related newspapers. Just go to the Union digital center and ask the Entrepreneur; he will search and give all of the job-related information”.

One of the migrant workers replied that

“In 2009, I have to go to the Upazila to collect a passport form, and I had to take help from the one Local Dalal (Broker) to fillup that passport application, and then I submitted that form. The broker charged me 2500 taka to fill out that passport application form. But when I came back to Bangladesh last year and I need to reissue my passport. My friend told me that you do not need to go to Upazila to collect your passport application form and do not need to seek help from the Dalal (Broker). Just go to the Union Digital center; the UDC entrepreneur will help you fill your application and charge a minimum of 100 takas (1.17 \$). I did it. I am thrilled to see this center”.

So, this institution has been working as one umbrella institute that incorporates many public services and has been working to ensure public service in a very remote area.

- **Well decorated and well equipped with computer accessories**

Some of the Union Digital Centers are very well decorated and well equipped. Some of the UDC is very spectacular in that it dazzles people's eyes. These offices are well-furnished as well.

- **Available computer trainer in the remote area**

The UDC entrepreneur got different training organized by the other organization of the government. As soon as UDC entrepreneurs get appointed, they must take training from the A2I and receive a certificate. At the same time, some of the entrepreneurs join in different online workshops and seminar training regarding computer and government service. After that, they can apply this training in the public service delivery process. At the same time, some of the UDC entrepreneurs open computer training centers in the UDCs and provide training facilities. One of the respondents replied

“I have opened this training center three years back, and I am continuing these training facilities. It helps me earn extra money. Most of the trainees are very young”.

- **Way of innovation process mechanism for the public service**

The UDC entrepreneur has been working as a change agent to bring and create innovation in rural areas. They have a list that incorporates the services available at the UDC. And the list also contains the user fee of the service recipient. The UDC entrepreneur has described that “sometimes some people come to me with a new problem and new service are not incorporated in this list. That time I can add it to our list. At the same time, I have to find and seek a new mechanism to sustain and compete in the market. Because in 2012, there was no computer center or cyber center in the local Bazar except the Union Digital center. But right if you go to the Bazar and check closely, you will find two or three cyber cafes or computer shops. It creates a lot of challenges in this sector.”.

- **Reduce transaction cost**

The UDC has reduced the transaction cost for the service recipients as well. The service recipient has replied that

“In the past, whatever we want, we have to go to the Upazila Headquarter. But now, I do not need to go to Upazila Headquarters. Just go to the Union Digital Center; we get most of the information. It looks like a total package”.

- **Reduce time and number of visits**

it has been proved that UDC has reduced the transaction cost of the service recipients because they do not need to visit the Upazila frequently. Right now, it is very easy to get any information and public service through the UDC center. The service recipients had to visit several times in different offices to collect information, but they will get most of the data if they go to the UDC center. One of the respondents has replied that

“I had to go to several times to make correction my National Identity Card in the Upazila Election office. First of all, I had to go to the Upazila for getting information. It took a lot of time and money as well. But right now, as far as I know, if I go to the UDC center, I shall get most of the information, even he will help me to correct my NID card”.

Another respondent replied that

“I had to go to Upazila several times to get information regarding admission to the university for my elder son. But last year, my son passed the HSC examination, and I did not need to go to the Upazila. He went to the UDC center and collected all of the relevant admission information from the UDC”.

- **Ensuring faster and door stops service**

Most of the public service become significantly faster. In the previous two-point it has been proved that UDC has reduced the transaction cost, time, and several visits to the other offices. If the recipient does not need to go to the public office to get their desire service, it will automatically save their time and money. At the same time, service has become fast and affordable for the service recipients

6.7 Challenges of UDC

- **No legal framework**

Although UDC has been running for a long, still this large institution has no legal framework. As a result, the operational procedure is not well defined. At the same time, the UDC entrepreneur becomes puzzled about their activities. One of the UDC entrepreneurs alleged that

“Although we do not have any legal framework, we have a valid and formal identity card provided by the senior secretary of local government division, and the secretary signed the ID card. We demand that the central government institutionalize our post as we all are working for a long time”. At present, they have filed a case to be absorbed in the Union Parishad office.”

- **Job security**

As there is no legal framework, it is clear that there is no job security for the UDC entrepreneur. It is dependent on the personal whim of the union Parishad chairman. One of the UDC entrepreneur respondents that

“We always feel very scared regarding our jobs. Because our job is dependent upon the union chairman, I have to follow the instruction and orders of the chairman of the union. I did not get any formal recruitment or appointment letter. It is like a contract. Even this contract is nothing to me. Because this contract does not ensure my job security”.

To analyze this statement, 82% of respondents (UDC entrepreneurs) said they do not have job security. On the contrary, the concerned chairman was questioned regarding this allegation.

He alleged that he never uses their power to pressure them or threaten them if they do not follow their instruction and do not fulfil an order as they fear losing their job. Even I use to support him. We can see their workstation. How beautiful their workplace. They have everything.”

On the contrary, the entrepreneur alleged that-

“This office has been furnished and decorated by my financing. I did not get any support from the union chairman.”

- **The high cost of internet data and internet speed**

Most of the UDCs does not have a high-speed internet connection. As a result, they have to depend on mobile internet, which is too expensive. On average, they have to spend 1500 taka every month. At the same time, the speed of mobile data is not good enough to access different government websites. One of the UDC entrepreneur respondents that

“We indeed have an internet connection, but this connection is not working right now. This line is ancient, and it was connected with an old cable. As a result, we hardly use this broadband internet. This low-speed internet is seriously hampering our daily activities, and sometimes we cannot provide different services proper and timely. On one side, my income is deteriorating because I cannot ensure timely service. It also increases my monthly expenditure as well.”

On the other hand, the union chairman claimed that

“In my union, we have an internet connection, and he has everything, and people are getting service timely.”

In contrast, one of the service recipients replied that

“I have been waiting for one week, and I am coming every day. Sometimes they say (Internet Nay, Server Nay) internet is not working, a server is not working. Every day they are showing new excuses”.

But the UDC entrepreneur replied that

“He has indeed been waiting for one week, But the liability is not on me. If the server and internet are not working properly, then how would I complete and upload his form?”

- **Lack of alternative electricity**

All of the Union Digital Centers are located in a comparatively rural area. As a result, the power outage is a widespread phenomenon that has seriously damaged different activities and services.

One of the UDC entrepreneurs said that

“I have been working since the beginning of this UDC. Load shedding is widespread in this area. Especially during the summer season, the situation becomes worst. I talked with the UP-chairman sir and UNO sir but failed to get any solution from them. Even personally, I cannot buy a UPS because of a higher price. Since then, they did not provide any UPS or IPS to continue our activities properly even during a power outage”.

At the same time, we talk to the chairman to verify our information, he replied that

“It is true that we are facing a load shedding problem and cannot financially support the UDC entrepreneur. This is because I did not get any allocation from the government. Even I do not have any reserve funds using which I can support him”.

- **Lack of women participation as Union Digital Entrepreneur**

When UDC was started to operate all over Bangladesh, there is a provision that every Union Digital Center must have one male entrepreneur and one female entrepreneur. Most female entrepreneurs were absent in the UDC center, or some of the UDC does not have any female representation. One of the empirical examples is Barikandi Union Digital Center. There is no female entrepreneur. Even male entrepreneurs do not know that there is a provision that this center requires to have a female entrepreneur.

- **Higher service charge**

Although they have a fixed rate to provide the service, they do not follow the settled price for the rendered services. Sometimes it depends on the relation of the UDC entrepreneurs and service recipients. If they are familiar with him to her, the service recipients will be charged very low. But if service receivers are not familiar with them, they will be charged more. The service recipients were asked regarding the user fees. The respondents replied that

“For filling out the passport application form, I was not informed about the user fees, and he charged me 200 takas”

On the other hand, other birth certificate recipients have replied that

“I had to come to him to fill the birth registration form for my cousin, and he charged me 300 takas”.

- **Lack of computer accessories and photocopier machine**

All of the Union Digital Centers are very old, and if electronic and computer accessories are too old, it isn't easy to open big size files. One of the service providers alleged that

“My computer, printer, and scanner is as old as this Union Digital Center. My desktop computer is much backdated that if I open two or three internet browsers, my whole computer hangs up and stops functioning. I had to restart my computer to start my activities. At the same time, some of the application software does not support this desktop computer. This is because its configuration is very poor and backdated. Although I have learned to use some valuable applications like Adobe Photoshop, Dxo photo lab or Corel Paintshop and photo editing, unfortunately, my computer is not supporting this software because of the need for high configuration. Even sometimes, I need to repair my computer and update my computer software. But this desktop computer is too old not to find different parts of the computer and do not support the update software. Just see this photocopier machine, it is not at all functioning. Last five years, I have repaired several times with my own money, but right now, it has broken down again. At the same time, I do not have enough money to buy a new Photocopier machine, because one new machine price is too high that I cannot afford it.

- **Limited income on UDC Entrepreneurs**

UDC entrepreneurs are facing a financial crisis. Their income is deteriorating day by day due to a lot of competition. One of the entrepreneurs alleged that

“In 2010-2011, I used to earn 25-30 thousand taka per month. But right, I cannot earn more than 10 thousand takas.”

One of the UDC entrepreneur respondent that,

“Because in 2010-2011, there was only one computer shop in this area, that means I am the only person who used to provide computer-related services in this area, but right commercial services are being provided by the closest market in the rural area. At the same time, my UDC center is not situated in the rural hat Bazar. It is located a little far away from the local Bazar. On the other hand, many private individuals have opened their businesses in the local Bazar area. As a result, people are not coming to me to get different services.

- **Lack of financial and budgetary support**

As mentioned before, the government does not allocate any financial support for the UDCs, so the UDCs' entrepreneur does not get any financial support externally. At the same time, their daily costing is not reducing. One of the respondents alleged that-

“I am passing a tough time. Day by day, my income is decreasing. I do not know how I shall be able to bear the costings of my family life. I have passed a very crucial time of life in this institution. And right my age is expired to apply for other government and private jobs. But now, this institution is not helping me to take care of my life. Even I do not have any other alternative options to quit and start a new job or business”.

- **Frequent interference by the Union Parishad Chairman**

The conflict between the union Parishad chairman and the UDC entrepreneur is one of the serious concerns, especially those not appointed by the current chairman or not following the chairman's order. One of the respondents alleged that

“The previous chairman appointed me, and I used to work smoothly, but right now, it is tough for me to continue in this institution. He has been interfering in my day-to-day activities.”

On the other hand, the Chairman stated that

“I never interfere in his activities. Even he has been operating his business very smoothly than the previous time”.

- **Lack of proper training**

Training is one of the very pre-conditions for proper service delivery. It is essential to be appropriately informed and trained before doing things. These issues have to be addressed very clearly. They have to be informed of their job responsibility and their tasks and activities. To

complete the jobs, the service provider has to have proper training regarding the different positions. But unfortunately, they had received single training when they started their business. Later on, they did not have any other training facilities or join in seminars or workshops.

- **Absence of job description**

As there are no government rules and regulations to operate the Union Digital Center, the job description is unclear for the UDC entrepreneur. They are free and open to conduct their business. Whatever they want to add to their business, they can add and operate their business. The problem is that sometimes they become perplexed about whether it is legal or not. This problem has repeatedly been happening due to the absence of a detailed job description.

- **No formal accountability mechanism**

There is no formal system of ensuring transparency and accountability at the Union Digital Centers. Although the UDC entrepreneur has informed that they usually submit their document and daily activities information to the UNO, in reality, they do not submit their information. This is because they are unable to ensure proper and complete documentation of their activities. One of the entrepreneurs alleged that it is true that they cannot provide full documentation, but usually, UNO call them to submit what they have done in the last month. Even during the Covid-19 period, he sent the relevant documents.

- **Frequent interferer by the local politician**

Some of the UDC centers are badly affected by the local politicians. One of the UDC entrepreneurs has responded that 'he is not supported by the local politician like union chairman and another politician because the previous chairman appointed me. I am terrified about my job. Even he is trying to get me terminated from the job and recruit someone else into my career.

- **An insignificant number of female entrepreneurs**

One of the significant challenges is the lack of female entrepreneurs. Most of the UDC center does not have any female participants. Those who have female participants were not present at the Union digital Center. In Bogra district, we have seen that Union Parishad member has

become an entrepreneur of the Union Digital center in one Union Digital center. Not only that, he appointed his wife as a female entrepreneur in case he is terminated from this business. One of the local people said that

“This male Union Parishad member was a male entrepreneur, the last election he becomes elected member, but he did not stop himself from continuing his business rather he appointed his wife as the female counterpart”.

- **Absence of female entrepreneurs in the workplace**

There is no female participation in the UDC. Some of the UDCs has female entrepreneur, but they are irregularly present in the UDC center. One of the male entrepreneurs has alleged that “she did not attend the office because we cannot make more money since we share our income. As a result, they are not motivated to come to the office.

- **Exercising political power**

Most Union Digital Center entrepreneurs have a relationship with the Union Parishad chairman or have an excellent relationship with the local politician. As a result, most of them have to give the service free of cost. One of the entrepreneurs has alleged that “sometimes local people come to me and tells me that chairman send to take this service from you and they refused to give any money. For example, sometimes they refuse to provide birth certificates government fees as well. Sometimes, monthly I have to give a financial penalty like 1500 to 2000 taka. I cannot but have to fulfil the birth registration application without money. Or someone came to me with a strong recommendation from the local politician, which is hard to deny.

- **Versatile relation between unions Parishad Secretary and UDC Entrepreneur**

Respondents alleged that sometimes they have to work until night to complete the task assigned by the UP chairman. And these tasks are supposed to be done by the Union Parishad secretary. But they have been forced to do it. Even they do not pay any extra money for the tasks so done.

- **The threat to the government**

UDC entrepreneurs filed litigation against the DC (Deputy Commissioner) as to why they will not be turned into permanent employees against the post of computer assistant who is eligible and fulfils the requirement of the job.

- **Free-riding problems**

It is common among local politicians to expect that they deserve the free service from the UDC center. Even sometimes, they put pressure to provide the service without any user fees. One of the respondents (entrepreneur) alleged that

“They do not understand that we have to buy everything. Sometimes they make a printout from me but refused to give me any money. If they continue taking service from me without paying any money, I shall not be able to continue my business since I do not get any support from the government.”

- **No guideline for the recruitment and selection of the UDC entrepreneur**

And finally, there is no guideline for the recruitment of Union Digital Center entrepreneurs. Once any UDC becomes empty of an entrepreneur, there is no guideline regarding who will be eligible for the business. Almost all UDC entrepreneurs are relative of the union Parishad chairman or have a strong relationship with a local politician.

Part C: Findings & Discussion

The findings have been categorized into five sections: administrative, political, business, personal, and service recipients.

6.8 Administrative Issue

- **No recruitment and selection framework of the government**

The government of Bangladesh publicized a UDC circular in 2013 regarding the roles, responsibilities of UDCs, and the part of Union Parishad regarding services of UDCs. This has proved to be insufficient to run the management and service functionalities of UDCs. This framework does not focus on the recruitment and selection of entrepreneurs in Union Digital

Centers. As a result, fair recruitment and selection have become a challenging issue. Sometimes, the UP chairman and members try to influence the recruitment process. Some UDC entrepreneurs are less qualified, which adversely affects the service delivery process at union digital centers. Entrepreneurs are generally recruited in Union Digital Centers based on the information provided by UP chairman and UP members. One of the entrepreneurs shared his journey in UDC:

“I got recruitment as an entrepreneur when the journey of UDC was started in Bangladesh for the first time. I have good communication with the existing Chairman and Members. For this reason, I got information that a male and female entrepreneur will be appointed at Union Level. I received training under Access to Information (A2I). Due to my attachment, I got the information and applied to get selected for playing a role as a UDC entrepreneur in Union Parishad. However, it would be constructive to find out competent and potential employees”.

- **No job security of UDC entrepreneurs**

There is no job security for the entrepreneurs of the union digital centers. UDC entrepreneurs are working at UDC as entrepreneurs. There is no process of making them permanent. As a result, entrepreneurs are not getting motivated. UDC entrepreneurs thought that they would be permanent though the government did not give any commitment to them. In 2015, UDC entrepreneurs got an identity card with the signature of a senior secretary. In that case, they had the perception to get engaged with the government. One of UDC entrepreneurs claimed that-

“I have no security. My job depends on the mercy of the Chairman of Union Parishad. If there is an anomaly between Chairman and UDC entrepreneurs, then it will be challenging to sustain with the job”.

During the interview, one chairman shared his opinion-

“I do not know what is going to happen in the near future. Entrepreneurs do not have job security. We have no direction regarding them. UDC entrepreneurs are playing a supportive role not only in delivering services to citizens but also in some significant activities of Union Parishad.”

One of the experts alleged that

“If the entrepreneur does not work independently due to lack of job security, they will not be able to work properly. They have to have job security and freedom to decide”.

Chairman is not supposed to interfere in the UDC entrepreneur recruitment and selection. But unfortunately, they are doing. It has to be stopped. Otherwise, no qualified entrepreneur will agree to hold this position and run the UDC”.

- **The low-level decision-making power of UDC entrepreneurs**

UDC entrepreneurs have low-level decision-making power. In most cases, decisions related to UDC’s functions are carried out by the Union Chairman. UDC entrepreneurs do not appeal to UDCs for logistics though there is no hard and fast rule for providing logistics by the Union Parishad. It is entirely dependent on the discretion of the UP Chairman and UP Secretary.

One entrepreneur claimed in this way:

“We are not considered as an integral part of the decision-making process relating to Union Digital center. Most of the time, the Chairman of Union Parishad takes decisions single-handedly. We have lots of issues that need to be discussed with the Chairman. But we hardly get the opportunity to get engaged in the decision-making processes. Sometimes, we need the budget and various types of support from Union Parishad. Union Parishad provides the budget for our help, but it is an infrequent phenomenon. Some instruments need to repair, but the budget is not available to do so. Regarding these issues, entrepreneurs do not have the power to talk with Chairman.”

- **The apathy of monitoring UDC’s function**

UDC monitoring authority has the responsibility to monitor UDC’s function. UP Chairman hardly monitors the activities of union digital centers. Some Chairmen monitor the activities of union digital centers. Due to the smooth monitoring process, sometimes service-related problems cannot be solved. 44% of entrepreneurs opined that the monitoring committee monitors the activities, and 20% do not know about the existence of the monitoring committee.

- **Lack of training initiative for skill development of UDC entrepreneurs**

Entrepreneurs of union digital centers only receive training from Access to information (A2I). After that, they did not receive any training. As a result, UDC entrepreneurs are not capable of adding new services in commercial services. In some cases, it is expressed by one Chairman-

“I do not have any instructions and guidelines on how to provide training to entrepreneurs. My entrepreneurs received training since they joined in union digital center. But it is not happening now. The entrepreneurs are not getting the opportunity to meet the need of time, and still, they continue doing their job in their way. If we have any guidelines from the

government, then it can be possible to arrange formal training for the entrepreneurs. This initiative can be beneficial to enhance the abilities, skills, and aptitudes of entrepreneurs.”

- **Lack of logistics support at UDC office**

In the union digital centers, there are tables, chairs, computers, printers, the internet, etc. But in most cases, internet speed is very low, which affects the service delivery process. Three-fourths of UDC entrepreneurs experienced poor level internet speed. Only 6.3% opined that they have a substantial level of internet speed. Most of the photocopy machines and scanners are useless, and entrepreneurs are not enabled to deliver services. The presence of UPS is hardly found at union digital centers.

- **Lack of chairman’s consciousness regarding UDC’s performance**

In the survey, Chairmen were asked whether they are informed about the performance of union digital centers. Most of the UDC chairmen opined that they are well informed about UDC’s performance. The chairman does not organize meetings with entrepreneurs and receives feedback from UDC entrepreneurs and service recipients. As a result, UDC entrepreneurs are being deprived of guidance and direction from the guardian of Union Parishad.

One of the Chairmen responded that-

“I don’t have to communicate with the entrepreneur of Union Digital Center. The performance of UDC is not satisfactory. An entrepreneur is not responsible for service delivery to citizens. As Union Digital Center is a separate entity at the union level, it is not the responsibility of the Chairman to know what is happening at Digital Center. So, I think it is not under Chairman’s duty to have information regarding UDC’s performance.”

- **The strong influence of UNO, A2I, and Chairman**

In the union digital center, internal actors positively influence the functions of union digital centers, resulting in better performance in service delivery. UNO, A2I, and UP Chairman coordinate to run the union digital center properly. In the survey from the opinion of all UP chairmen and UDC entrepreneurs, the internal influence was highly required and is exceedingly essential to run the smooth functioning of the union digital center.

- **Stereotype government, commercial, and information services**

Most of the services of UDCs are being provided manually though the government has the vision to spread services at the local level electronically. All the government services were received manually by the service recipients. In the case of birth certificates, UDC entrepreneurs filled the form using BRIS software. After that, recipients received the services. In commercial services, e-banking, printing, and photocopy services are completely manual where recipients need to physically present at the union digital center. Email is the only service that is delivered both manually and electronically. Only education and commerce-related information service were provided both manually and electronically. Sitting home, citizens call UDC entrepreneurs for getting information. In the case of agriculture service, all respondents attended only in person for getting adequate information.

- **Suitable location of UDC**

In most cases, Union Digital centers are located very close to local people to receive services quickly. The survey found that 50% UDCs is located adjacent to Bazar. 25% UDCs are located within 1km, and the rest 25% within 2-3km/4-5km.

6.9 Service Delivery' issue

- **Manual Service delivery**

In most cases, UDCs are delivering services manually because citizens do not have adequate logistics for getting service at their doorstep. All kinds of government, commercial, and information services are now being provided traditionally though e-service requires electronic service delivery for recipients delivered at home.

- **The consciousness of service recipients regarding UDC services**

It is very crucial for the citizen that they have to be well informed of different services. Before application and receiving, people have been reported. One of the positive issues is that the service recipients are moderately informed regarding government services, commercial and information services.

- **Faster services delivery**

Government has to ensure fast service and disseminate services among the people. In the UDC, entrepreneurs provided faster services among the local people and did it very well. People are satisfied based on the quick delivery of services.

- **Responsiveness of UDC entrepreneurs in service delivery**

UDC entrepreneurs are very responsive. As soon as citizens come to the UDC, service recipient gets their services without any delay. One of the crucial points is that the entrepreneur is always available on the UDC from dawn to dusk.

- **Availability and dissemination of information to recipients regarding UDC's services**

UDC entrepreneurs had to disseminate information among the local people through a poster, networking, government campaign, and UP chairman. In the absence of a concerted effort, they have to bear this burden alone.

- **Saving cost of recipients**

As UDC entrepreneurs are trained, they can utilize their resources, and they know how to use different types of electronics and computer devices. As a result, people efficiently get their services. At the same time, people do not need to come to UDC physically to take some commercial and information services. Instead, they may opt-in to receive these types of services over the phone call and through the internet, which is helpful to reduce the transportation cost and time. Money is not a matter of concern; instead, receiving service is highly important. A correlation (Pearson) was conducted that shows a value which is 0.183 (see annex 7.4.1.2). This value means there is no correlation between satisfaction and money paid for receiving services. Transportation cost does affect the satisfaction of the government service receivers. As it is government services, service recipients are obliged to come to the UDC for the government service. Like 21.3% of service recipients had to travel 3-4 kilometers.

6.10 Political issue

- **Interference of external actors on UDCs**

External actors have been influencing different activities in the Union Digital Center. External actors incorporate Political parties, communities, and community groups. Significantly, political actors are directly affected by various activities. They send their followers to UDC for getting different services, and most of the time, they refuse to pay any fees. On the other hand, the head of the community-based organization (CBO) and head of the Community people also influence the activities of the UDC. Sometimes they come physically to UDC and take service or refer others to avail services without any fees. 88% of Chairmen have disagreed with the interference of external actors. Likewise, 63% of UDC entrepreneurs also disagreed with the influence of external actors. So, more than one-third of UP Chairman and more than 50% of UDC entrepreneurs disagreed with the influence of external actors. This influence significantly delimits UDC's function.

In the opinion of experts, it is found that-

“Local politics has considerable influence on functions of Union Digital Center. Sometimes, the ruling party attempts to take advantage of the union digital center regarding service delivery. UDC entrepreneurs sometimes cannot charge a service fee for service delivery.”

- **Direct interference in the recruitment and selection of UDC entrepreneurs**

Chairmen directly influences the recruitment process. Those recruited as UDC entrepreneurs have either direct or indirect connections with the Union Parishad Chairman. If the chairman changes, it would be challenging for the UDC entrepreneur to continue in that particular Union Digital Center. In one case, one of the entrepreneurs said that-

“The Chairman of Union Parishad is his Uncle, which is why he got the information to get recruited. My uncle suggested I apply here and receive training from Access to Information. After that, I received training and joined here as an entrepreneur. Without the support of my uncle, it could have been impossible to work at UDC as an entrepreneur.”

- **The political affiliation of UDC entrepreneurs**

Some of the UDC entrepreneurs have political affiliations with the ruling political party. As a result, they have strong lobbying with the local Chairman as well. Sometimes, they exercise their political power, which is reflected through external behavior. Entrepreneurs are trying to sustain their position using this political affinity.

6.11 Business Issue

- **Citizen Engagement in commercial and information service**

Although people are obliged to come to UDC to get the government services, they are not obliged to come to UDC to get this service in terms of commercial and information services. The service recipient goes to the local private computer shop to bring commercial and information services because most of the UDCs does not have a photocopier machine, and those who have their photocopier machine are not working. At the same time, most of the computer accessories are too old to run.

- **The low-level income of UDC entrepreneurs**

Most of the UDC entrepreneur's income is deteriorating day by day because most commercial and information services are not readily available to be provided by the entrepreneurs except Dhaka District due to lack of computer accessories. Comparatively, the entrepreneur has smart income in the Dhaka district as they have different branches outside of the Union Parish Office.

- **Growing competitors in the local market**

In 2010-2011, there was only one office where people used to get government service, commercial, and information services. But at present, some villages have more than one computer shop, which creates massive competition among the UDC entrepreneur. As a result, most commercial and information services are shifted from UDC to private computer shops.

- **Opening branch of UDC center at the local market**

Some of the UDC entrepreneurs have already opened some branches, which are brilliant decisions taken by the UDC entrepreneurs, especially in Dhaka District. But out of Dhaka, they

are incapable of opening any branch. At the same time, it creates a problem as well. Because those who have opened branches in the local Bazar are not present in the main UDC. As a result, people fail to get expected services from main UDC branches, and the branches became pure business institutions, not services-oriented institutions.

6.12 Personal Issue

- **Lack of willingness to innovation and change in commercial and information services**

UDC entrepreneurs have failed to bring significant levels of innovation and changes to provide and make recipients encouraged to come to the UDC to take commercial and information service, which led to increased income. Only a few UDCs are trying to make innovations to sustain their business and make a profit. Even most UDC entrepreneurs lack in general willingness to bring any innovation towards the UDC and its sustainability.

- **Low-level engagement of female entrepreneurs:**

One of the common scenarios was that female entrepreneur was the absence in the UDC center. Although some of the UDC female entrepreneurs present, they do not play an active role in the UDC as entrepreneurs instead work as a helping hand.

- **Lack of entrepreneurs' willingness to take investment risk**

Entrepreneurs do not want to take any risk regarding investment in the UDC. They do not want to invest any money. Because they believe that they do not have any job security. They will invest more money to renovate their office and new computer accessories once they have been given job security.

- **The behavior of the UDC entrepreneurs**

Behavior is necessary to improve the service delivery process at UDCs. So, a correlation was conducted to know whether behavior influences the satisfaction of the service receivers. In government service, the correlation (Pearson) value is .323 (see annex 7.4.1.2), which means there is no correlation between happiness and behavior of the UDC entrepreneurs. In the case of government services, money is not a matter of concern. Instead, receiving service is highly

important. In the case of information service, the correlation (Pearson) value is .112 (see annex 7.4.1.3), which means there is no correlation between satisfaction and behavior of the UDC entrepreneurs. This is because the survey proves that most of the recipients received information services while sitting at home. On the other hand, in commercial service, the correlation (Pearson) value is .696 (see annex 7.4.1.1), which means there is a correlation between satisfaction and behavior of the UDC. Because commercial services of UDCs cannot be provided electronically, local people must come in person to receive benefits from the UDCs.

Chapter Seven: Conclusion and Recommendation

7.1 Conclusion

E-governance in Bangladesh can significantly promote cost-effective service delivery (Bhuiyan 2011; Osman 2016). Despite being a lower-middle-income country, Bangladesh has a success story in governance including, sustained high GDP growth rate and per-capita income, massive foreign reserve, the surplus in the balance of payments and eradication of extreme poverty (Pandey 2017). Bangladesh has been trying to implement e-governance with its limited resources. Implementation of e-governance is widely being discussed as to the potential of providing public service to the citizen (Backus 2001; Ahmad 2007; Hijab and Zambrano 2008; Monjur 2010, Weerakkody et al., 2011). To keep pace with the modern world, the present government of Bangladesh has already taken an ambitious initiative to implement ICT enabled governance under the banner of digital Bangladesh to deliver public service and ensure national development. With the assistance of prudent bureaucrats, the government of Bangladesh is energizing in achieving vision 2021. The journey of UDC was started as government innovation to deliver government, commercial and information services among citizens to fulfil the government's dream of Bangladesh. Throughout the journey of UDCs, the government provided various kinds of support to UDCs.

In that sense, the government is successful in giving such an excellent opportunity for creating entrepreneurship. Thus, employment opportunity was made at the local level. But now, UDCs are facing specific critical challenges. There is a good number of reasons for which they have to survive in a necessary environment. Due to growing business in the local market, citizens are not going to the union digital center, mainly located at the Union Parishad office. At the same time. Local business competition has been threatening UDC's function at the local level. Citizens are interested in receiving government services because commercial services can be availed from the local market quickly. Information Services can be easily availed from sitting home if anyone has a smartphone or computer access. As a result, UDC entrepreneurs have fallen into a dilemma about what will happen in the future at UDCs. Besides, entrepreneurs do not have job security regarding the sustainability of jobs and institutions as well. At present, Union Digital Centers are consistently burdened with various problems claimed by UDC entrepreneurs. Due to network problems, entrepreneurs have been failing to deliver hassle-free services. Some entrepreneurs are

politically recruited. As a result, they are not enabled to provide service effectively. The government has not taken any initiative to provide soft skill-based training to entrepreneurs. Entrepreneurs have been in conflicting positions with the government, and they claim secured jobs. In that case, innovation is highly required at the union digital center to expedite service delivery. Otherwise, the sustainability of union digital centers will be at stake in the coming days. Bangladesh is standing at the very beginning stage of e-governance. Though the government of Bangladesh has taken various initiatives over the years to bring change in service delivery, the status of e-service delivery has not reached up to the mark yet. All government ministries, divisions, department autonomous bodies, and all District headquarters, Upzilla headquarters, and Union Parishad offices will come under one umbrella and must be networked to the national database. All this government body has to have a website that posted all of the relevant information and forms regularly and establish an ICT cell that can be managed and run by the well-trained ICT professional to plan, coordinate, and implements different ICT projects and services. Government has to have web portal where people can get all of the information in a single place. At the same time, all government links will be provided to the websites, like e-forms, e-procurement, e-recruitment, e-results, etc. 4554 UDCs have provided more than 150 public and private services, while more than 367 million people have received assistance from the union digital center (A2I, 2018). UDC has been running across Bangladesh since 2010. All the numbers (4554) have been operating under the two private entrepreneurs. This private institution has been working with the support of A2I through the PPP Program. On average, 41.65 million taka has been earning by UDCs every month (BBS 2014) which shall help to sustain the UDC in the future.

7.2 Recommendation

- **Formulate a legal framework of UDCs**

At present, there is no specific legal framework for union digital centers to run functions of UDCs. This is adversely affecting the performance of UDCs. So, local government experts suggest formulating particular law and policy guidelines for UDCs that will help determine the recruitment, selection and functioning of entrepreneurs in the UDCs.

- **Stopping Interference of internal and external actors**

Different external actors have been influencing the UDC entrepreneur since the beginning of the center. Especially local political parties and community leaders influence very badly in UDC entrepreneur activities. As a result, entrepreneurs cannot work and formulate decisions independently. At the same time, politicians tend to take services free of cost. This type of political interference and free service is needed to be stopped immediately.

- **Curbing Direct interference in the recruitment and selection of UDC entrepreneurs**

It has been proved that the Union Parishad Chairman recruits UDC entrepreneurs. Most of the time, entrepreneurs have a beneficial and questionable relationship with the Chairman. As a result, they have to comply with the request and persuasions of the Union Chairman.

- **Specific guidelines for recruiting or selecting UDC entrepreneur**

There is no formal guideline for the recruitment process or selection process. As a result, local politicians, especially chairmen, have become the key actor to recruit and select UDC entrepreneurs. This problem requires immediate action for making the UDCs efficient and sustainable in terms of efficient functioning.

- **Ensured job security**

As there is no guideline for recruitment and or selection, they do not have any job security. Their jobs depend on the chairman's whim. Although they are private entrepreneurs, there must have job security.

- **Regular monitoring and evaluation of the functioning**

The function of the UDC has to be monitored periodically to ensure citizen satisfaction. Each organization, either public or private, has to be monitored to meet the expectations of the service recipients.

- **Organized training facilities for the UDC entrepreneur**

Some people can say that as private entrepreneurs, they shall have to be offered training facilities. But it is essential to bear in mind that they have been working to transform traditional society into a digital community, and in the rural area, they are the principal agent for bringing

changes eventhough they are not government officials. To ensure digital Bangladesh, the government and other agencies must organize different training facilities for the entrepreneurs' sustainability and increasing income levels.

- **Ensuring logistic support**

Although all of the UDC has a computer and other essential equipment, they are too old to provide smooth and efficient services to the service recipients. Almost all the UDCs do not have photocopier machines. They have to repair and buy digital instruments and supportive accessories with their own money to ensure service.

- **Relocation of the Union Digital center**

All of the UDC is situated in the Union Parishad office. But some of the UDC centers are not located in commonly accessible places like local markets. As a result, people usually do not want to come to the UDC to receive commercial and information services. But they receive government services from the UDC as this is the only place to take them. Most of the time, people take commercial and information services from the local computer shop situated in the local Hat Bazar.

- **Citizen Engagement in commercial and information service**

People comes to the UDC as there are no other alternative options to avail government services like birth certificates, citizen certificates, etc. But in terms of commercial services and information services, they usually avoid coming, which would have been excellent sources of income. Instead, they prefer to receive that information from the local bazaar. So, they have to bring them back to the UDC for commercial and information services to stimulate their income. at the same time if some governmental task (different type of data entry) are given to them , it will help them to earn some extra money.

- **More innovation in UDCs**

Businesses require being innovative to increase their income. Most of the entrepreneurs are as old as the UDC. But in terms of their capacity and innovation, they remain far behind. In some circumstances, local service providers are doing well compared to them. So, they have to increase their personal and business capacity to sustain and increase their income.

- **Opening branch of UDC center at a local market**

It has been seen that some of the smart entrepreneurs are doing their business very well, and they have opened new branches and operated their business very efficiently. So other entrepreneur has to communicate to them and exchanges their ideas so that comparatively impoverished UDC can increase their income which may lead to economic sustainability. The main objective of opening of branches UDC is to sustainable the UDC by and large.

- **Facilitating high-speed internet**

Some of the UDCs do not have high-speed internet, and some of them have a broadband connection, but their speed is not up to the mark. So, all of the UDCsmust have high-speed internet and connected with the fiber optic cable so that they can get uninterrupted high-speed internet. At the same time, their internet cost has to be reduced.

- **Reducing maintenance cost of the UDCs**

The entrepreneur has to find a new way out to reduce their expenditures relating to maintenance their office to make their office sustainable. Some of the UDCs have to pay the electricity bill, but the local union parishad office should pay it.

However, this study has some limitations that lead to the direction of future study. Due to pandemic, time and financial constraints, this study was conducted on the 16-union digital centers out of 4554, a proportionally very small number. The scope was supposed to be bigger, which could have incorporated other aspects of the union digital center. So further research can be conducted on sustainability of Union digital center, which shall help identify other aspects of this center. The service list of Union Digital center is very large, but only nine services were taken to conduct this study. As a result, some of the other important services may keep apart. As a result, many services have been left out. The rest of the services can be worked out in the future.

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7.4 Annex

7.4.1 Correlation Result

7.4.1.1

Commercial service corelation.spv [Document1] - IBM SPSS Statistics Viewer

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GET

```
FILE='D:\fatema apu\SPSS data input fatema apa\SPSS final\Commercial se
e.sav'.
```

```
DATASET NAME DataSet1 WINDOW=FRONT.
```

CORRELATIONS

```
/VARIABLES=Amount_of_money Satisfaction_about_UDC
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Commercial vice.sav

Correlations

		10. How much money you had to pay while receiving service?	16. How satisfied are you on UDCs entrepreneur regarding your service?
10. How much money you had to pay while receiving service?	Pearson Correlation	1	.184
	Sig. (2-tailed)		.102
	N	80	80
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.184	1
	Sig. (2-tailed)	.102	
	N	80	80

CORRELATIONS

```
/VARIABLES=Travel_cost Satisfaction_about_UDC
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Commercial vice.sav

Correlations

		12. How much money do you need to pay to reach at UDC	16. How satisfied are you on UDCs entrepreneur regarding your service?
12. How much money do you need to pay to reach at UDC	Pearson Correlation	1	.249*
	Sig. (2-tailed)		.026
	N	80	80
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.249*	1
	Sig. (2-tailed)	.026	
	N	80	80

*. Correlation is significant at the 0.05 level (2-tailed).

CORRELATIONS

```
/VARIABLES=Feeling_about_UDC Satisfaction_about_UDC
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Commercial vice.sav

Correlations

		15. How do you feel about the UDCs entrepreneurs behave regarding ...	16. How satisfied are you on UDCs entrepreneur regarding your service?
15. How do you feel about the UDCs entrepreneurs behave regarding your service?	Pearson Correlation	1	.896**
	Sig. (2-tailed)		.000
	N	80	80
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.896**	1
	Sig. (2-tailed)	.000	
	N	80	80

** . Correlation is significant at the 0.01 level (2-tailed).

7.4.1.2

Print Next Page Prev Page One Page Zoom In Zoom Out Page Setup Close

```
GET
  FILE='D:\fatema apu\SPSS data input fatema apa\SPSS final\Government se:
e. sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
CORRELATIONS
  /VARIABLES=Amount_of_money Satisfaction_about_UDC
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Government vice.sav

Correlations

		10. How much money you had to pay while receiving service?	16. How satisfied are you on UDCs entrepreneur regarding your service?
10. How much money you had to pay while receiving service?	Pearson Correlation	1	.183
	Sig. (2-tailed)		.104
	N	80	80
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.183	1
	Sig. (2-tailed)	.104	
	N	80	80

```
CORRELATIONS
  /VARIABLES=Satisfaction_about_UDC Travel_cost
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Government vice.sav

Correlations

		16. How satisfied are you on UDCs entrepreneur regarding your service?	12. How much money do you need to pay to reach at UDC
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	1	-.168
	Sig. (2-tailed)		.137
	N	80	80
12. How much money do you need to pay to reach at UDC	Pearson Correlation	-.168	1
	Sig. (2-tailed)	.137	
	N	80	80

```
CORRELATIONS
  /VARIABLES=Satisfaction_about_UDC Feeling_about_UDC
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

[DataSet1] D:\fatema apu\SPSS data input fatema apa\SPSS final\Government vice.sav

Correlations

		16. How satisfied are you on UDCs entrepreneur regarding your service?	15. How do you feel about the UDCs entrepreneurs behave regarding ...
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	1	.323
	Sig. (2-tailed)		.003
	N	80	80
15. How do you feel about the UDCs entrepreneurs behave regarding your service?	Pearson Correlation	.323	1
	Sig. (2-tailed)	.003	
	N	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

7.4.1.3

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Correlations

		10. How much money you had to pay while receiving service?	16. How satisfied are you on UDCs entrepreneur regarding your service?
10. How much money you had to pay while receiving service?	Pearson Correlation	1	.117
	Sig. (2-tailed)		.300
	N	80	80
16. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.117	1
	Sig. (2-tailed)	.300	
	N	80	80

CORRELATIONS

```

/VARIABLES=Travel_cost Satisfaction_about_UDC
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
    
```

Correlations

[DataSet2]

Correlations

		12. How much money do you need to pay to reach at UDC	18. How satisfied are you on UDCs entrepreneur regarding your service?
12. How much money do you need to pay to reach at UDC	Pearson Correlation	1	.165
	Sig. (2-tailed)		.143
	N	80	80
18. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.165	1
	Sig. (2-tailed)	.143	
	N	80	80

CORRELATIONS

```

/VARIABLES=Feeling_about_UDC Satisfaction_about_UDC
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
    
```

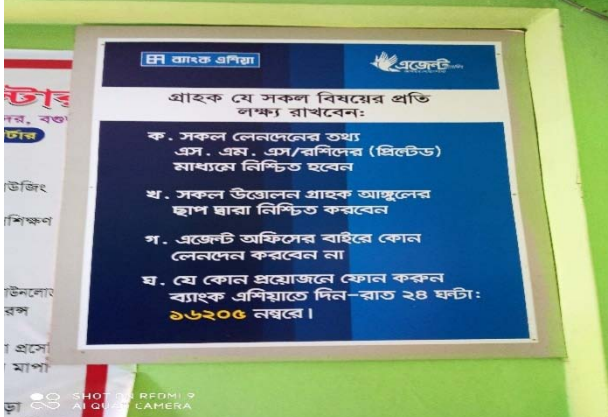
Correlations

		15. How do you feel about the UDCs entrepreneurs behave regarding ...	18. How satisfied are you on UDCs entrepreneur regarding your service?
15. How do you feel about the UDCs entrepreneurs behave regarding your service?	Pearson Correlation	1	.112
	Sig. (2-tailed)		.324
	N	80	80
18. How satisfied are you on UDCs entrepreneur regarding your service?	Pearson Correlation	.112	1
	Sig. (2-tailed)	.324	
	N	80	80

7.4.2 Fieldwork Experience











7.4.3 Questionnaire

Questionnaire (Government Services)

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name: _____ Gender: _____
Union: _____ Age: _____
District: _____ Education: _____
Profession: _____

1. Do you know about the services of UDCs?

a. Yes b. No

2. Did you ever receive any services from UDCs?

a. Yes b. No

3. If Yes, what kinds of government services did you receive from UDCs? (multiple option)

a. Online Birth and Death Registration (form fill in)

b. Online university admission

c. Public Examination results

d. Citizenship certificate

4. How have you informed about the above-mentioned government service?

a. Social Media

b. Government notice

c. Television

d. Print media

e. Electronic Media

f. others.....

5. How did you receive service?

a. manually

b. electronically

6. How frequently do you visit UDC?

a. 1-10 days

b. 15-30 days

c. 2-6 months

d. 1 Year

e.....

7. Did you receive your service on time?

a. Yes

b. No

8. If yes, how much time did it take to receive services?

9. How many times did you visit in UDC to receive service?

10. How much money you had to pay while receiving service?

11. How far is the UDC situated from your home?

- a. 1-2km
- b. 2-3km
- c. 3-4km
- d. 4-5km
- e. 5-6km
- f.

12. How much money do you need to pay to reach at UDC

13. Mode of transportation

- a. on foot
- b. bicycle
- c. by rickshaw
- d. by auto
- e. motor cycle

14. Did the entrepreneur become available while receiving services?

- a. Yes
- b. No

No	Areas	Very Satisfied	Satisfied	Neutral	Not very satisfied	Not at all satisfied
15	How do you feel about the UDCs entrepreneurs behave regarding your service?					
16	How satisfied are you on UDCs entrepreneur regarding your service?					
17	Does the UDC's equipment fulfill your desired services?					

18. Which aspect of UDCs do you like most?	<ul style="list-style-type: none"> a. Saving time b. reducing hassle c. reducing cost d. easy access to information e. faster communication f. meeting up needs speedily g. others.....
--	--

19. Does the UDC entrepreneur have relation with Chairman?

- a. Yes
- b. No

20. Does UDC entrepreneur have any affiliation with political parties?

a. Yes

b. No

21. Did you have any problems while receiving services?

a. Yes

b. No

22. If yes, then explain what type of problem you faced.

.....
.....
.....
.....

23. In your opinion, do you have any solutions to overcome problems?

.....
.....
.....
.....

24. How do you expect to receive the particular services from the UDC in future?

a. manually

b. electronically

c. both

25. In your opinion, which aspects of UDCs must be changed?

.....
.....
.....
.....

Questionnaire (Commercial Services)

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name: _____ Gender: _____
Union: _____ Age: _____
District: _____ Education: _____
Profession: _____

1. Do you know about the services of UDCs?

a. Yes b. No

2. Did you ever receive any services from UDCS?

a. Yes b. No

3. If Yes, what kinds of government services did you receive from UDCs? (multiple option)

e-Banking

E-mail

4. How have you known about the above-mentioned service?

- a. Social Media
- b. Government notice
- c. Television
- d. Print media
- e. Electronic Media
- f. others.....

5. How have you received service?

- a. manually
- b. electronically

6. How frequently do you visit UDC?

- a. 1-10 days
- b. 15-30 days
- c. 2-6 months
- d. 1 Year
- e.....

7. Did you receive your service on time?

a. Yes b. No

8. If yes, how much time did you take to receive services?

.....

9. How many times did you visit in UDC to receive service?

.....

10. How much money you had to pay while receiving service?

11. How far is the UDC situated from your home?

- a. 1-2km
- b. 2-3km
- c. 3-4km
- d. 4-5km
- e. 5-6km
- f.

12. How much money do you need to pay to reach at UDC

13. Mode of transportation

- a. on foot
- b. bicycle
- c. by rickshaw
- d. by auto
- e. motor cycle

14. Did the entrepreneur become available while receiving services?

- a. Yes
- b. No

No	Areas	Very Satisfied	Satisfied	Neutral	Not very satisfied	Not at all satisfied
15	How do you feel about the UDCs entrepreneurs behave regarding your service?					
16	How satisfied are you on UDCs entrepreneur regarding your service?					
17	Does the UDC's equipment fulfill your desired services?					

<p>18. Which aspect of UDCs do you like most?</p>	<ul style="list-style-type: none"> a. Saving time b. reducing hassle c. reducing cost d. easy access to information e. faster communication f. meeting up needs speedily g. others.....
---	--

19. Does the UDC entrepreneur have relation with Chairman?

- a. Yes
- b. No

20. Does UDC entrepreneur have any affiliation with political parties?

- a. Yes
- b. No

21. Did you have any problems while receiving services?

- a. Yes
- b. No

22. If yes, then explain what type of problem you faced.

.....
.....
.....
.....

23. In your opinion, do you have any solutions to overcome problems?

.....
.....
.....
.....

24. How do you expect to receive the particular services from the UDC in future?
a. manually b. electronically c. both

25. In your opinion, which aspects of UDCs must be changed?

.....
.....
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.....

Questionnaire (Information Services)

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name: _____ Gender: _____
 Union: _____ Age: _____
 District: _____ Education: _____
 Profession: _____

1. Do you know about the services of UDCs?

a. Yes b. No

2. Did you ever receive any services from UDCS?

a. Yes b. No

3. If Yes, what kinds of information services did you receive from UDCs? (multiple option)

Education

Commerce

4. How have you known about the above-mentioned service?

- a. Social Media
- b. Government notice
- c. Television
- d. Print media
- e. Electronic Media
- f. others.....

5. How have you received service?

a. manually b. electronically

6. How frequently do you visit UDC?

- a. 1-10 days
- b. 15-30 days
- c. 2-6 months
- d. 1 Year
- e.....

7. Did you receive your service on time?

a. Yes b. No

8. If yes, how much time did you take to receive services?

9. How many times did you visit in UDC to receive service?

10. How much money you had to pay while receiving service?

11. How far is the UDC situated from your home?

- a. 1-2km
- b. 2-3km
- c. 3-4km
- d. 4-5km
- e. 5-6km
- f.

12. How much money do you need to pay to reach at UDC

13. Mode of transportation

- a. on foot
- b. bicycle
- c. by rickshaw
- d. by auto
- e. motor cycle

14. Did the entrepreneur become available while receiving services?

- a. Yes
- b. No

No	Areas	Very Satisfied	Satisfied	Neutral	Not very satisfied	Not at all satisfied
15	How do you feel about the UDCs entrepreneurs behave regarding your service?					
16	How satisfied are you on UDCs entrepreneur regarding your service?					
17	Does the UDC's equipment fulfill your desired services?					

18. Which aspect of UDCs do you like most?	a. Saving time b. reducing hassle c. reducing cost d. easy access to information e. faster communication f. meeting up needs speedily g. others.....
--	--

19. Does the UDC entrepreneur have relation with Chairman?

- a. Yes
- b. No

20. Does UDC entrepreneur have any affiliation with political parties?

- a. Yes
- b. No

21. Did you have any problems while receiving services?

- a. Yes
- b. No

22. If yes, then explain what type of problem you faced.

.....
.....
.....
.....

23. In your opinion, do you have any solutions to overcome problems?

.....
.....
.....
.....

24. How do you expect to receive the particular services from the UDC in future?

- a. manually
- b. electronically
- c. both

25. In your opinion, which aspects of UDCs must be changed?

.....
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.....

7.4.4 Interview & KII

Interview Chairman (UDC monitoring authority)

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name:

Gender:

Union:

Age:

District:

Education:

Profession:

1. Do you have any monitoring committee for UDC?

a. Yes

b. No

2. Who are the members of the committee?

.....
.....
.....
.....

3. For how long has the committee been formed?

.....
.....

4. Does the committee regularly form?

a. Yes

b. No

5. If no, mention the reasons.

.....
.....
.....
.....

6. Does UDC monitoring authority monitor activities of UDC?

a. Yes

b. No

7. If yes then how?

.....
.....
.....
.....

8. Do you organize training for UDC entrepreneur?

a. Yes

b. No

9. If yes, then how frequently do you organize?

.....
.....

.....
10. Are you informed about the performance of UDCs?

- a. Yes
- No

11. How satisfied you are about the performance of UDCs?

- a. Highly satisfied
- b. Satisfied
- c. Moderate
- d. Dissatisfied
- e. Strongly dissatisfied

12. If yes, then which internal actors have influence on UDC's function?

- a. government
- b. UNO
- c. others

13. Do you agree with the influence of internal actor?

- a. Yes
- b. No

14. If yes/no, then explain why?

.....
.....
.....
.....

15. How does the actor influence?

.....
.....

16. Is there any influence of external actors on UDC's function?

- a. Yes
- b. No

17. If yes, then which external actors have influence on UDC's function?

- a. Political Parties
- b. Community Based Organization
- c. Donor
- d. General People

18. Do you agree with the influence of external actor?

- a. Yes
- b. No

19. If yes/no, then explain why?

.....
.....
.....

20. How does the actor influence?

.....
.....

21. What is your view regarding recruitment process of UDC entrepreneur?

.....
.....

.....
22. What is your opinion regarding female entrepreneur?
.....
.....

.....
23. Is it possible to bring innovation and change in the e-service delivery process of UDCs to ensure fast services? How?
.....
.....

.....
24. In your opinion how can citizen centric e-services be ensured at local level?
.....
.....

.....
25. Do you think that UDCs are rational to promote e-service delivery? Yes/No

Explain please.
.....
.....
.....

.....
26. Do you think that citizens have to face hassles While receiving e-services from UDCs?
.....
.....
.....

.....
27. Do you have any suggestion for further improvement of UDCs?
.....
.....

.....
28. What is your opinion regarding e-service delivery capacity of UDCs? (providers/receivers)
.....
.....

.....
29. Do you have any observation regarding e-services of UDCs?
.....
.....

.....
30. Recommendation
.....
.....

Interview: UDC Entrepreneur

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name: _____ Gender: _____
 Union: _____ Age: _____
 District: _____ Education: _____
 Profession: _____

1. Do you attend regularly at UDC office?

a. Yes b. No

2. What kinds of services do the recipients frequently receive from UDCs?

No	Nature of Services	
a	Government services	a. Online Birth and Death Registration (form fill in) <input type="checkbox"/> b. Different types of government forms <input type="checkbox"/> c. Government circulars and notices <input type="checkbox"/> d. Online university admission <input type="checkbox"/> e. Public Examination results <input type="checkbox"/> f. Population census data entry <input type="checkbox"/> g. Citizenship certificate <input type="checkbox"/> h. Land registration certificate etc. <input type="checkbox"/>
b	Commercial Services	e-Banking, life insurance <input type="checkbox"/> English learning <input type="checkbox"/> Computer training <input type="checkbox"/> Internet browsing <input type="checkbox"/> E-mail <input type="checkbox"/> Printing <input type="checkbox"/> Scanning <input type="checkbox"/> Compose <input type="checkbox"/> Photocopy <input type="checkbox"/> Laminating <input type="checkbox"/> Data entry <input type="checkbox"/> Photography <input type="checkbox"/> Phone call <input type="checkbox"/> Flexi load <input type="checkbox"/> Mobile ringtone download <input type="checkbox"/> Video show <input type="checkbox"/> Video conference <input type="checkbox"/> Projector rent <input type="checkbox"/> Application form fill-up for Passport <input type="checkbox"/>

c	Information Service	Agriculture <input type="checkbox"/>			
		Health <input type="checkbox"/>			
		Education <input type="checkbox"/>			
		Tourism <input type="checkbox"/>			
		Other.....			

3. What kind of equipment do you need to deliver service?

.....

4. Do you have aforementioned equipment in UDC office?

a. Yes

b. No

5. If no, then explain what kind of equipment scarcity do you have?

.....

6. Do you have adequate internet speed?

a. Yes

b. No

7. How about internet speed in UDC office?

a. Very Strong b. Strong c. Moderate d. Poor e. Very Poor

8. How much cost do you have to pay for Internet access?

.....

9. On an average how much money do the recipients have to pay for required services?

.....

10. How do you feel regarding your monthly income?

a. very satisfied

b. satisfied

c. moderate

d. poor

e. very poor

11. Are you satisfied in your job/position/benefit/facilities?

a. Yes

b. No

12. If no, explain why?

.....

13. How did you get your recruitment?

.....

14. Do you have any relation with Chairman?

- a. Yes
- b. No

15. Do you have any affiliation with political parties?

- a. Yes
- b. No

16. How do you preserve data?

- a. electronically
- b. manually
- c. both

17. Does the UP organize training for entrepreneurs?

- a. Yes
- b. No

18. Do you get service-related support from UP?

- a. Yes
- b. No

19. If yes, please scale it.

- a. very strong
- b. strong
- c. moderate
- d. poor
- e. very poor

20. Do the UDC entrepreneurs have job security?

- a. Yes
- b. No

21. If no, give your opinion??

.....

.....

.....

22. Level of engagement of female entrepreneur of UDCs:

- a. Very high
- b. high
- c. medium
- d. low
- e. very low.

23. To what extent UDC entrepreneurs exercise power in decision making in the respective UDC.

- a. Very high
- b. high
- c. medium
- d. low
- e. very low.

24. Does the UDC monitoring authority monitor activities of UDC?

- a. Yes
- b. No

25. Do you face any challenges while delivering e-services?

- a. Yes
- b. No

26. If yes, then explain what kinds of challenges do you face while providing e-service?

.....

.....

.....

.....

27. Is there any influence of internal actors on UDC's function?

- a. Yes
- b. No

28. If yes, then which internal actors have influence on UDC's function?

- a. government b. chairman c. UNO d. others
29. Do you agree with the influence of internal actor?
 a. Yes b. No

30. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

31. If yes/no, then explain why?

.....

.....

.....

.....

32. How does the actor influence?

.....

.....

.....

33. Is there any influence of external actors on UDC's function?

- a. Yes b. No

34. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

35. If yes, then which external actors have influence on UDC's function?

- a. Political Parties b. Community Based Organization c. Donor d. General People

36. Do you agree with the influence of external actor?

- a. Yes b. No

37. If yes/no, then explain why?

.....

.....

.....

.....

38. How does the actor influence?

.....

.....

.....

39. Do you any suggestions to overcome the challenges of e-service delivery at UDCs?

.....

.....

.....
40. Do you have any suggestion for further improvement of UDCs?
.....
.....
.....
.....

41. How can e-service of UDC be faster?
.....
.....

KII Expert

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name:

Gender:

Profession:

Contact:

1. What do you think about the appropriateness of e-governance framework in the context of Bangladesh?
2. What is your opinion regarding present structure and management system of UDCs?
3. To what extent is electronic service delivery fit for the society?
4. Do the UDCs have adequate logistics support to provide e-services? (Yes/No)
5. If yes, what do you think about the functionality of those logistics?
6. Do you think that UDCs are rational to promote e-service delivery? Yes/No
7. Explain please.
8. Do you think that citizens have to face hassles While receiving e-services from UDCs?
9. What do you think about policy framework of UDCs?
10. How will you evaluate the role of UDC monitoring authority?
11. What is your opinion regarding e-service delivery capacity? (providers/receivers)
12. Do you have any observation regarding e-services of UDCs?
13. What do you think about the job security of UDC entrepreneurs?
14. What are the potentialities of UDC in future days?
15. Will global ICT meet up our demand in e-service delivery? Yes/No.
16. If yes, then how. If no, then why?
17. To what extent do we have capacity to keep pace with Global ICT revolution in e-service delivery?
18. To what extent do we have adaptability to adjust with global ICT and technology in e-service delivery?
19. Is data security matter of concern to the effective e-service delivery? Yes/No
20. What do you think about the data security capacity regarding e-service delivery?
21. Does the UDC entrepreneur have relation with Chairman? Yes/No
22. Does UDC entrepreneur have any affiliation with political parties? Yes/No
23. What is your view regarding recruitment process of UDC entrepreneur?

- 24. What is your opinion regarding female entrepreneur?
- 25. Is it possible to bring innovation and change in the e-service delivery process of UDCs to ensure fast services? How?
- 26. In your opinion how can citizen centric e-services be ensured at local level?
- 27. Does e-service delivery promote good governance? Yes/No
- 28. If yes, then how can e-service delivery promote good governance?
- 29. Can e-service be an issue of challenges for governance? Yes/No
- 30. If yes, then how Can e-service be an issue of challenges for governance?
- 31. can e-service contribute to the fulfillment of SDGs? Yes/No
- 32. If yes, then how can e-service contribute to the fulfillment of SDGs?
- 33. Would you please describe some recommendations for dynamic e-service delivery in UDCs?
- 34. . Is there any influence of internal actors on UDC’s function?
 - a. Yes
 - b. No

- 35. If yes, then which internal actors have influence on UDC’s function?
 - a. government
 - b. chairman
 - c. UNO
 - d. others
- 36. Do you agree with the influence of internal actor?
 - a. Yes
 - b. No

37. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

38. If yes/no, then explain why?

39. How does the actor influence?

- 40. Is there any influence of external actors on UDC’s function?
 - a. Yes
 - b. No

41. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

42. If yes, then which external actors have influence on UDC's function?

- a. Political Parties
- b. Community Based Organization
- c. Donor
- d. General People

43. Do you agree with the influence of external actor?

- a. Yes
- b. No

44. If yes/no, then explain why?

.....

.....

.....

.....

45. How does the actor influence?

.....

.....

.....

KII Government Officials)

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Name:

Gender:

Upazila:

Contact:

1. What is your opinion regarding present structure and management system of UDCs?
2. Do the UDCs have adequate logistics support to provide e-services?
 - a. Yes
 - b. No
3. If yes What do you think?
4. Have you ever received any complain regarding e-service delivery from UDCs?
5. How will you evaluate the role of UDC monitoring authority to promote e-services?

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

6. How will you give mark regarding the performance of UDC?

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

7. Do you monitor the activities of UDC entrepreneurs? Yes/No.

8. If yes then explain how?

9. How would you scale UDC entrepreneurs' skill, knowledge and capacity to provide e-service delivery?

	Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)
Skills					
Knowledge					
Capacity					

10. Do you find any challenges in the e-service delivery process of UDCs? Yes/No

11. If yes, explain what are the challenges?

12. Is there any influence of internal actors on UDC's function?

- a. Yes b. No

13. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

14. If yes, then which internal actors have influence on UDC's function?

- a. government b. chairman c. others

15. Do you agree with the influence of internal actor?

- a. Yes b. No

16. If yes/no, then explain why?

.....

.....

.....

.....

17. How does the actor influence?

.....

.....

.....

18. Is there any influence of external actors on UDC's function?

- a. Yes b. No

19. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

20. If yes, then which external actors have influence on UDC's function?

- a. Political Parties b. Community Based Organization c. Donor d. General People

21. Do you agree with the influence of external actor?

- a. Yes b. No

22. Measurement of influence

Very High (05)	High (04)	Moderate (03)	Low (02)	Very low (01)

23. If yes/no, then explain why?

.....

.....

.....

.....

24. How does the actor influence?

.....

.....

.....

25. In your opinion, how can citizen centric e-services be ensured at local level?

.....

.....

.....

26. What is your view regarding recruitment process of UDC entrepreneur?

27. What is your opinion regarding female entrepreneur?

28. Is it possible to bring innovation and change in the e-service delivery process of UDCs to ensure fast services? How?

29. Do you think that UDCs are rational to promote e-service delivery? Yes/No

30. Explain please.

31. Do you think that citizens have to face hassles While receiving e-services from UDCs?

32. Would you please describe some recommendations for dynamic e-services in UDCs?

.....

.....

.....

33. For the improvement of effective e-services through UDCs, what is your suggestion?

.....

.....

.....

7.4.5 Focus Group Discussion

FGD

This questionnaire is designed for academic purpose. The data collected from respondents will be restored anonymously.

Union:

District:

List of the participants:

1. Existing services of UDCs
2. Timelines in service delivery
3. Level of Satisfaction
4. Expectations from UDCs
5. Performance of UDCs
6. Challenges of UDCs
7. Any complain regarding UDC services
8. Recommendation