

**The Effectiveness of Union Digital Center (UDC) in Bangladesh:
A Study on the Services Provided by the Government**

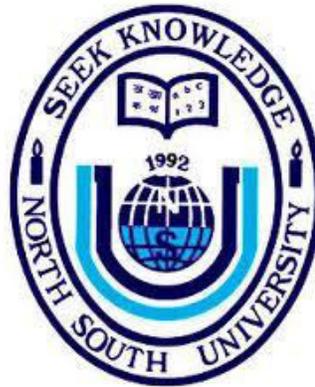
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Dedicated.....

**To my parents Ruby Rahman and Sheikh Shamsur Rahman who
always encourage me to make my life easy and enriched.**

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Abstract

Connecting last mile people with public service delivery is a great concern for the popularly elected government at present era. Various ways are practiced to improve the citizen oriented services across the world. The government of the country has granted many initiatives to reach the common services of the government to last mile people in the light of capacity building and functioning E–Service with the help of UNDP supported Access to Information (A2I) program. Tele-center is one of the greatest initiatives in the area of E- governance which is practiced in Bangladesh of its own context in the name of Union Digital Center (UDC). Access to information project (A2I) took initiatives to establish Union Information Service Center (UISC) in 2009 which is renamed as Union Digital Center (UDC) in 2014. Establishing ICT based center at every union (the lowest tier of local government) of the country is much ambitious issue for the developing country like Bangladesh. Because the country is manifested various problems like insufficient energy, low computer literacy, complex bureaucracy and so on. The purpose of the study is to assess the level of effectiveness of Union Digital Center (UDC).

Effectiveness of UDC is measured by assessing the level of satisfaction of UDC users. UDC has two kinds of users: service receivers and service providers. Their satisfactions have been derived by four independent variables: Demographic Factors, Supportive Factors, Service Receiver’s Expectancy and Service Provider’s Expectancy. Both quantitative and qualitative methods are followed. Data was collected by self-administered questionnaire from four UDCs of two districts. Quantitative data were analyzed using Ms Excel and SPSS program.

The research revealed that UDC is effective mostly. Common villagers overwhelm pleased with the services of UDC delivered at present. The main factors for service receivers that positively affect the effectiveness are less service cost, less service delivery time and well behavior of service providers compare to previous days. But the main factors for service providers that positively affect the effectiveness are service process easiness and social recognition for the work. The factors that negatively affect the effectiveness of UDC are low number of government services provided by UDC and slow speed of internet. A comprehensive analysis has been made about all the factors that affect UDC effectiveness. Finally, further research area including a short recommendation about UDC has been mentioned for increasing the effectiveness of UDC.

Key Words: Government Service, UDC, Effectiveness, Service receiver’s satisfaction, Service provider’s satisfaction.

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List of Abbreviations

A2I- Access to Information

ADC- Additional Deputy Commissioner

BD- Bangladesh

BRC- Birth Registration Certificate

DB –Digital Bangladesh

DC - Deputy Commissioner

GoB- Government of Bangladesh

PMO- Office of the Prime Minister’s of Bangladesh

SP –Service Provider

SR – Service Receiver

UDC- Union Digital Center

UISC- Union Information Service Center

UNO-Upazila Nirbahi Officer

UP- Union Parisad

Chapter 1

Introduction

Satisfaction lies in the effort, not in the attainment, full effort is full victory.

Mahatma Gandhi

Connecting last mile people with public service delivery is a great concern for the popularly elected government of present era and various ways like E-governance¹ has been emerged to meet the demand of new age. Practicing E-service and applying Information and Computer Technology (ICT) is the most practiced tool to improve the delivery of service across the world. Heeks (2001) argues that E-governance helps to simplify administration process and increase operational efficiency which leads effectiveness of organizations ultimately. By using E-governance a substantial change can be brought in the public administration. Not only that, ICT enabled connected governance contributes to avoidance of duplication, reducing transaction costs, simplifying bureaucratic procedures, greater efficiency, enhanced transparency and accountability, security of information management, faster service delivery and greater citizen participation(Ahmad 2013). Developed countries are in far ahead position in applying E- governance and achieving the goal of citizen satisfaction to the government service. With its proven ability to transform the traditional government into an efficient one and its close association with the socio-economic development, this revolutionary phenomenon has also attracted many developing countries to use it as a tool to improve efficiency in public service delivery and to fight against socio-economic evils such as poverty, illiteracy, underdevelopment, corruption, etc (Gofran 2014). Developing countries like Bangladesh are also trying to introduce E-governance to ensure the effective service to the common people. UNDP Supported Access to Information programme (A2I) works with the government in this manner very closely. The government of the country took many initiatives in the light of capacity building and functioning E –service with the help of A2I program.

¹E-governance- It is a combination of E- administration, E-Service and E- Society. E-administration means by using ICT to improve government process, E-Service means connecting people to the process and E-Society means building external interaction with the process (Heeks 2001).

Tele-center² is one of the greatest initiatives in the area of E- governance across the world and the idea of Tele-center is practiced in Bangladesh in its own context. Some private organizations are serving the rural people in practicing the idea of Tele-centre from 1980 and onward. But those initiatives are limited to several places targeted some specific jobs and groups like empowering women, educating illiterate people etc. But Union digital Center is one of those ideas of Telecenters is now prevalently practiced in the country to serve the rural community targeting the whole population of the country. Access to information project (A2I) took initiatives to establish Union Information Service Center (UISC) in 2009 which is renamed as Union Digital Center in 2014 to serve the common people in the country. As per Rahman (2014) in order to take public and private services at the doorsteps of the rural community people, UISC has been established by the initiatives of A2I project supported by UNDP and USAID. UISC has been established based on the principles of Public-Private-People-Partnership (4Ps) model. Here it can be mentioned that unlike the conventional PPPs which focuses on building the large infrastructure 4Ps focuses to keep the citizens at the center of partnership model. Accordingly, the same model is going to be applied at Poursava and city areas through establishing Poursava Information and Service Centers (PISCs) and City Information and Service Centers(CISCs) in all semi-urban and urban areas(A2I 2014).

1.1 Background of the Study:

Bangladesh with area of 141770 square k.m. and 154 million populations is a rural based country. More than 80% people live in rural area and many villagers still live without electricity. The country is struggling to meet the basic demand of food, clothing, shelter, health and education of its inhabitants. Union digital Center was established by the ministry of Local Government and Access to Information Programme (A2I) initiatives to serve the rural people at their door step.

²Telecenter-It is a common place for public which provide ICT based services and the place is equipped with computer, laptop, internet facility, printer, multimedia projector, and scanner and so on. It exists in various countries in the world with different name like Community Multimedia Center, Multipurpose Community Telecenter, Public Internet Access Center etc. The main focus of the centers is to provide necessary ICT support to the rural people in the country.

1.1.1 Access to Information (A2I) Program:

Access to Information (A2I) Program started in 2007 is an UNDP and USAID supported project (program) having its office at the Prime Ministers' Office. The PMO manages the program activities in accordance with UNDP's National Execution (NEX)/National Implementation Modality (NIM) guidelines in a manner consistent with the GoB's and UNDP's policies and procedures. The PMO will assume overall responsibility for management and implementation as well as sustainability of the program results, through the National Project Director (NPD) and the Project Steering Committee (A2I 2015).

The overall objective of the project is to provide support in building a digital nation through delivering services at the citizen's doorsteps. The program aims to improve quality, widen access, and decentralize delivery of public services to ensure responsiveness and transparency. The solutions offered by the project are:

Introduction of m/e-services

Public services delivered through mobile or internet can reduce long distance travel, corruptions ridden face-to-face interactions and need for intermediaries. An introduction to dashboards will further improve the service delivery performance; induce the process of quality oversight by the senior government officials (A2I 2015).

Capacity Development of Service Providers

The capacity of the service providers is being developed by introducing a CBT (computer based training) program to enable a quick development of skill training courses (A2I 2015).

Promoting Innovation in Public Service Delivery

The 'Service Innovation Centre', proposed in this project will be responsible for identifying scope for innovation, provide technical support to design innovative solutions and encourage innovation (A2I 2015).

Creating an enabling environment for e/m-services delivery:

The program supported the formulation of various institutional norms, including basic laws and standards and emerged as the country's leading centre of expertise for e-government and citizen e-services solutions (A2I 2015).

The project is facilitating implementation of e-services across various Ministries, directorates in field administration; it is working closely with the Cabinet Division. Different initiatives like establishing Union Digital Center, District E-Service Center³ (DESC) have been established with the help of the program.

Now, the rural people can download almost all government forms, circulars from the union digital center. Students can apply for admission without going to the education place or city area which was impossible for rural student before operation of union digital center. Literature on ICT for Development covers both optimistic and pessimistic thinking regarding the potential of telecenters (Heeks, 2005; Heeks, 2008; James, 2005; Kumar and Best, 2006; Harris et al., 2003 as cited by Akhter 2012). From the optimistic perspective, ICT is considered as a catalyst for development and a tool for faster information exchange and transmission which is reducing costs of information and communication practices. The pessimistic position concerns the viability of projects due to deep-seated issues in developing country such as poverty, illiteracy, lack of ICT skills, and lack of ICT investment (Heeks, 2003; Heeks, 2008; Kumar and Best, 2006; Maitrayee, 2008; Sein et al., 2008 as cited by Akhter 2012).

So, it is necessary to know the status of UDCs as a telecenter in Bangladesh to serve the rural people from 2009 in the country. The study has been found out the level of effectiveness of UDC through government service provided by the centre.

³DESC-It is a center of ICT based one stop service outlet situated in the office of Deputy Commissioner in every district and started at 2011. It was established with the help of A2I programme and Government to improve accessibility and transparency in century old bureaucratic process.

1.2 Statement of Problem:

Headquarters of the district are the centre of almost all of the governmental work. As for example, land record is kept and maintained in district record room (a place within the deputy commissioner office building assigned by deputy commissioner of the district) which is situated in district head quarter. The copy of land record is needed essentially for transfer of the land. So, land owners in rural areas are to visit the district head quarter for collecting the copy of land record. Visits involve associated time and costs such as on food, travel, bribes, loss of day's income for time spent otherwise, etc. After incurring these costs and time when they eventually reach the destination they are faced with the bitter reality that prevails in the public offices or local government units such as absence of the provider, harassment in case of not paying bribes, unusual delay, low responsiveness, for which they are sometimes compelled to pay additional visits and costs (Gofran 2014).

Again, the country has very much hierarchical administration⁴. There have several layers of work procedure. Head of the offices are usually busy and not very much positive attitude to meet physically with service seekers. In case of problems service seekers are not able to reach the proper authority and misguided by lower level employees or tout (dalal)⁵frequently. Moreover, government services are very much process oriented and paper based. And the whole process is done through manually; as a result corrupt minded officials can manipulate the process easily. With the aspire to provide the services at the doorsteps of citizens and connecting the people of countryside, Bangladesh government has set-up e-service centers at Union (UISC), Upazila and District (DESC) level as part of e-governance scheme (Salam 2012). Now rural people of Bangladesh get the service from the UDCs. They can apply for getting copy of land record to the district collector through online.

⁴Hierarchical Administration- The Government of Bangladesh has two tier administrative systems. The upper tier is the Secretariat (contains 39 ministries) which represents the central Government. The work is delivered from Ministries through division (other tier) then district and finally Upazila.

⁵ Tout (dalal)- The persons who are not government employee but work very closely with employee/ authority. They help lower level government employee to perform the job directly or indirectly. In some cases they take oral permission from the authority and in some cases they work without knowing of authority.

Prior to entering into the e-governance, the public services had delivered through the conventional way where connecting citizens were hardly concern and doorsteps services were totally ignored and termed as c-service⁶. At the digital era of Bangladesh, government has tried to deliver the services through the e-service centers are called e-service. Shortage of power supply, lack of IT skilled manpower and existence of bureaucratic style of governance cause many problems in the country. As a result the e-service centres are facing challenge to deliver the public services in an efficient manner (Salam 2013).

The village people usually have no ability⁷ to use ICT directly at their home. In case of UDC, the villagers use the facility of ICT through indirect use. As for example, for online university admission, all technological facilities are provided by the UDC and students use it with the help of the service provider or entrepreneur. They take the service by paying a certain amount of fees/charges which was impossible before operation of UDCs. As a result the center created a new aspiration as well as expectation to the rural people in getting the different government services in their daily life. It is already mentioned that Bangladesh is manifested with many problems like insufficient electricity supply, very low computer literacy, and lack of ICT infrastructure and so on. Within the limitations on infrastructure, skilled manpower, literacy, energy etc the UDCs are operating from 2009 and creating new opportunities for rural people to add them with new age of public service. So, how effectively the UDCs are performing that is people's satisfaction related to provided services is the concerned issue in the study. The study tries to find out the effectiveness of union digital centers.

1.3 Rationale of the Study:

Office of the A2I project is situated within the Prime Ministers' office in the country. So, initiatives taken by the project are usually attractive to all. The aim of the project also complies in many ways with the aim of digital Bangladesh.

⁶c service- The way of service delivery through the agency-centric model of public service (Salam 2013).

⁷ Ability- It expresses as available power and electronics goods like computer, modem facility which are essential for ICT.

Digital Bangladesh:

During the 2008 elections, the Awami League's election manifesto "Vision 2021 Bangladesh: A New Horizon" introduced the concept of Digital Bangladesh (BAL, 2008). The concept was also reiterated in the government's updated manifesto in 2009. The DB agenda composed of four pillars that outline key areas like human resource development, connecting citizens, digital government and private sector (Salam 2013). While 'Digital Bangladesh' might generally be perceived as widespread use of computers only, its true meaning lies in suitable application of technology to materialize all the commitments of the government including the ones regarding education, health, employment and poverty alleviation. The main purpose of this idea is, therefore, to improve the standards of living of the people by empowering them and bringing public services to their doorsteps through the most effective use of technology (MoF, 2011). To implement the concept, at the grass root level, union digital centers (UDC) in each union and E-service center in each deputy commissioner's office have been established. Those centers will help to provide services to the doorsteps of people.

The present government has attached priority to achieving desired growth at faster pace by investing in ICT sector. ICT and information technology enabled services (ITES) industry is, indeed, contributing greatly towards economic growth and employment generation. The foremost requirement is to ensure ICT services for the marginalized communities by developing required ICT infrastructure countrywide together with internet connectivity at the grass-root level. At this stage, to stay competitive and relevant vis-à-vis the developed world, in confronting the challenges of the 21st Century, it is needed sincere efforts and active participation of the Government, NGOs, private sector, development partners and each citizen of the country in the pursuit of turning Bangladesh into a modern welfare state where happiness and prosperity will exist together and where there will be no hunger, poverty and inequality. Accomplishing this mission warrants concerted efforts for human resource development, e-Governance, expansion of e-commerce and e-literacy (MoF 2011). So, government of the Bangladesh is taking many initiatives in the light of digital Bangladesh and achieving the goal of DB. UDC is one of the priority sectors of those DB

initiatives of the country. Research on effectiveness of UDC may provide helpful guidelines in fulfilling the target of digital Bangladesh.

Again, UDCs are ICT based innovations. Poor infrastructure, inadequate supply of electricity and low literacy affects the people in Bangladesh severely. UDCs have created a new opportunity to use the technology or avail the opportunity by paying certain fees to the villagers. So, how the UDCs are performing to satisfy the service receivers' demand and expectation should be known. Salam (2013) conducted a research of assessment on District E Service Center for measuring good governance through e service in public service delivery. Gofran (2014) also made an assessment in UISC from beneficiary perspective. In Bangladesh there have some articles on the base of relationship between poverty reduction and ICT in UISC. A work has been found on UISC and its impact on ICT and education (Ekram 2014). There exists a gap in the area of measuring effectiveness of UDCs. There is not any significant work on effectiveness of UDCs. So, it is necessary to understand the level of effectiveness of UDCs whether it is able to create satisfaction of rural people. Again, the effectiveness of UDCs has been measured from both perspectives of UDCs service providers and service receivers in the research. The factors that affect the effectiveness of the center have been analysed critically also. The analyses may provide some guidelines to the policy makers as well as service providers to improve the quality of service.

1.4 Scope:

Government of Bangladesh is trying to provide E service to the rural area. The aim of that is lessen the gap of digital divide⁸. UDCs are trying to perform a great role to reach the unreached⁹ rural people in the country. So, a wider scope exists for research work to know the effectiveness of UDCs regarding government services. Some research work has been accomplished on information services. Bangladesh, as a country of third world, service providers of the UDCs are to face many challenges. How effectively they are performing

⁸Digital divide-It means Digital divide is the gap between those with regular, effective access to digital technologies and those without. It refers to those who can benefit from it, and those who don't, as opposed to just talking about who has direct access to technology, and those who don't.

⁹ Unreached- It means the village people who have no ability to use ICT facility at home.

within those challenges have been revealed from the study. One research has been found on assessment from beneficiary perspective. So, room for considering perspective of service providers exists rationally. Again the factors that affect the user's expectation regarding the UDC will be uncovered in the study which also may provide further opportunity of research.

1.5 Objective of the study:

Union Digital Center is one of the technology based innovative center. The center is working through engagement of both private and public entity and serving the rural people since 2009. So, the broad objective of the study is to know the level of effectiveness of UDC in providing Government services to the villagers. The specific objectives are:

- a) To find out the present status of government services provided by UDC.
- b) To assess the level of effectiveness of UDC in Bangladesh through satisfaction of its users.

1.6 Research Question:

1. How effectively the Union Digital Centers are working to provide government services to the rural people?
2. What are the factors that affect on effectiveness of UDC?

1.7 Limitation of the Study:

The research has some limitations. UDC is providing three types of services: government, commercial and information services. One of the limitations is services provided by the government are considered only in the study among the three types of services. The research is limited among four UDCs in two districts. So, other limitation is the sample size¹⁰ of the research which is very small due to financial and time limit. It would be better if more area is covered by the study. Other limitation of the study is the respondents were much positive

¹⁰ Total sample size is 74 and only 4 UDC under two districts is considered for study.

to the researcher for answering questionnaire compare to their actual attitude due to the researcher is a government employee.

1.8 Organization of the Report:

The research paper has been structured by six chapters. The first chapter describes the background of the study, statement of problem and significance of the study. It mentions the main objectives of the research as well as the research questions with the scope and limitations of the study. At last the first chapter ends with organization of the report.

The second chapter accomplished with brief overview about Union Digital Center. Structure, operation procedure and services provided by the center are discussed briefly in the chapter.

The third chapter stars with literature review of the study. Then theoretical background of the study has been discussed minutely. Finally analytical framework is explained in the end of the chapter.

The fourth chapter contains the research methodology with brief description of research area, data source, data collection, data processing and data analysis techniques in the study used.

The fifth chapter represents the critical analysis of data presented in the study. Data table, connected variables comparison and cross tabulations are mainly used to analyse the data collected through primary and secondary sources. Correlation between indicators of independent and dependent variables are critically analysed to explain the research questions mainly.

The sixth chapter concludes the report with brief discussion including further research guidance and few recommendations about UDC of the study.

Chapter 2

Union Digital center (UDC): An Overview

Union Information Service Center (UISC) was established in 2009 throughout partnership between local government division (LGD) and Access to Information (A2I) Program. The initiative is taken by the project under the Prime Minister's office in Bangladesh. It provides various government services, lively hood information as well as private services like application for visa processing and so on. Union Digital center- was started with the name of Union Information Service Center (UISC) in 2009 to connect citizen and to serve rural people at door step. In 2014, it was renamed as Union Digital Center (UDC).

2.1 Objective of the UDC: The aim of the center is to provide services at the citizen's door steps. It also aims to improve quality, widen access and decentralize delivery of public service to ensure responsiveness and transparency. Analyzing the activities of the project more specific objectives have been found like:

- To ensure easy access of common people to ICT based government and commercial services.
- To create ICT infrastructure at rural level and increase efficiency of UPs through prompt delivery services and make UPs as a hub of information and knowledge center.
- To provide a supportive environment for creation of local entrepreneurs and empowering rural community (Asad-Uz-zaman 2012).

2.2 How it is established: The center is established under Public Private People's Partnership¹¹ (PPPP) modality and hosted by concerned Union Parishad under the supervision of Central Administration. Modality of PPPP has been chosen because it is a great challenge for the Government to ensure E- service to the villager due to various

¹¹Public Private People's Partnership (PPPP)-It is a model of cooperation among private, Government bodies and common people. The main thought of modality is some projects are very much people oriented and engagement of people is also especially useful for survival of the projects. UDCs are people oriented approach, where all the stakeholders Government, Donor or private agency and villagers must work together to be successful of it.

problems like power, infrastructure etc. The UP provides space (commonly one room attached or within the Union Parishad Building) and utility (electricity bill) for the centre. Local government division coordinates with cabinet division and Bangladesh computer council to establish the basic ICT setup including computers, laptops, printers, multimedia projector, digital camera, webcam and solar panel. The entrepreneurs are free to install additional facilities to support business growth, at the same time, ensuring that the social sustainability of the centre is achieved by delivering government information and services. The center is established on the basis of Quick Win¹² initiatives (a2i 2015).

2.3 Entrepreneurs of the Centre: The center is operated by two local entrepreneurs (one is male and the other is female) who are self employed and motivated. They do not receive any remuneration from the government. There have some guidelines of appointing entrepreneurs from the deputy commissioner's office regarding adequate computer skills so that they are able to operate the technology. They invest financially in the center and get proper profit share as per the contract made between the respective union parishad and entrepreneurs.

2.4 Management of UDC: As per (Ahsan et al 2010) a committee comprising of 7-9 members represents as managing committee of the UDC. The Chairman of concerned union parishad is the chairman of this committee. The duration of this committee is about 2(two) years. One-third of the members of this committee would be the women. The UP secretary provides all types of institutional and other assistance to the committee. The managing committee is assigned to render the following activities:

- 1) Selecting of local entrepreneurs
- 2) Buying of different equipments of UDC
- 3) Selecting rate of charges for different services provided by UDC.
- 4) To assistance the entrepreneurs for maintaining different income account and expenditure reports.
- 5) To hold at least a meeting in each month for reviewing the UISC activities.

¹²Quick Win-Quick Wins are Information and Communication Technology (ICT) based short term initiatives adopted by various ministries and agencies of the Government of Bangladesh aimed at improving public service delivery mechanism. Quick Win initiatives strive to achieve four key objectives: a) Demonstrate strength, cost-effectiveness and flexibility of using ICTs in service delivery, b) Develop confidence among the public service officials about ICT-enabled public services)(A2I 2014)

- 6) provide all necessary assistance to the UDC entrepreneurs
- 7) Strengthen the motivational activities among the rural community people for taking the services provided by the UDC

2.5 How the center is operated: People go to the center as per their necessity and the operators provide the services by using ICT facilities. As for example, if someone needs a printed copy of a passport application form, he just conveys it to the entrepreneur of the center. The entrepreneur downloads the application form from the respective website and prints it. Finally, he provides it to the customer by receiving assigned charges. Total earnings of the center are distributed as per contract of the modality of PPPP.

2.6 Present Status of UDC: As per BBS (2014) number of UDCs operated in 4,492 Unions across the country whereas UDC was started for 4533 Unions. The rest 41 UDCs are closed now. The extent of private ownership over equipment like laptops, multimedia projectors and photocopier machine varies whilst mobile phones are the only device that enjoys almost 100% private ownership in almost all UISCs. A total of 3.91 million citizens are directly receiving information and services from UISCs every month. Of these, it has been estimated that total 949,120 are women, 16,160 ethnic or religious minorities, 62,266 physically challenged persons and approximately 237,282 citizens aged over 50 years are receiving services in various types of information from these centres saving their time, cost and hassle free environment. UISCs reported to generate about BDT 41.65 million (over half a million dollar, USD 545,337.00) on a monthly basis (BBS 2014).

2.7 UDC Services: It is observed that UDC provides 3 types of services: Information Services, Commercial Services and Government Services.

Information Services: Different kinds of information are available at UDC. They provide it to common people as per their demand and create awareness in favor of government. Information related to agriculture, health, education, law & human rights, tourism, environment & disaster management is provided by the center. Somewhere it arranges

consultancy with doctors. All these livelihood information are provided by other places like national e-Tathyakosh which has been collected by UDC also.

Commercial services: Providing photo of customers is one of the popular commercial services of UDC. Computer and English language learning training, photocopy, scanning, email, internet browsing, talking with Skype etc are different private services provided by the center. Partnership between various private organizations like bank, insurance company provides different private services also.

Government Services: Services like online birth registration, death certificate, citizenship certificate, character certificate, download different types of government forms, government circulars and notices, online university admission, examination results, population census data entry, application for government jobs etc.

Some common services like online birth registration are provided by every UDC of the country. But some services like mobile banking vary due to demand of rural people and some other reasons. However, key Services mentioned in respective website of UDC's are:

- Public exam results,
- Government forms download,
- Birth and death registration,
- Online university admission,
- Data Entry, VGD/VGF card database,
- Livelihood information,
- Employment information,
- Visa processing /visa form printing,
- E-mail and internet browsing,
- Video conferencing,
- Mobile banking, Computer training,
- British council's, English learning,
- Photocopying/ Scanning/Photo
- Mobile phone services etc. (A2I 2015).

Among those the main government services are: Birth and Death registration, application for passport, application for land record, online public university application, application for license of vendor, cement poison, food Grain etc, Complain and remedy for pension, land, family affairs, law and order, certificate of marriage, NGO approval, and appointment with Deputy Commissioner, video conferencing with government officials, VGD/VGF card database and so on. The Government services are almost common in every UDC. As per Census Report made by (BBS 2014), the popular and income generating services are:

- 1) Birth Certificate
- 2) VGD (Vulnerable Group Development)
- 3) Death Certificate
- 4) VGD (Vulnerable Group Feeding)
- 5) Composing Work etc.

2.8 Partners Organizations: Service partners are public and private banks (e.g. Dutch Bangla, Mercantile, Trust, bKash), life insurance companies (e.g. state-owned Jibon Bima), telecommunication companies (e.g. Robi, Banglalink) and non-government organizations (British Council, Ankur, Practical Action). Some of the partners also provide software & hardware troubleshooting support (e.g. Bangladesh Computer Council-BCC, Bangladesh Computer Samity-BCS, and Technology Today) (a2i 2015).

Now UDC is providing market related information through which buyer and seller can exchange necessary information. The sellers are able to know the demand of buyer and market strategies through it and buyers are also able to know about new products and prices of goods. As a result it helps to create a competitive market.

Chapter 3

Literature Review and Research Framework

3.1 Literature Review

3.1.1 Initiatives of Tele- center:

Tele-centre movement in Bangladesh has been initiated by Development Research Network (D.Net) in August 2006 with a successful international workshop on building tele centre family in Bangladesh: A workshop for social entrepreneurs and practitioners, held in Rangpur (Raihan 2007). D.Net joined hands with two other organizations, namely Bangladesh National Network for Radio Communication (BNNRC) and Young Power for Social Action (YPSA) to organize this workshop, which was supported by telecentre.org and UNDP.

Gonokendra: Centre for Community Development, first community learning centre started at 1987. Dhaka Ahsania Mission (DAM) supports these centers by supplying books, newspapers, newsletters, magazines, booklets, posters, wall magazines, etc. depending on level of literacy skills of the users (Raihan, 2007). As per same article Amader Gram Learning Centre (AGLC): Community Database for Development, has established village communication, information and learning center in April 2001 in Bagerhat, (in south-west part of the country) on pilot basis. AGLC has been presented as a successful case of grassroots ICT model held in October 2002 in Kuala Lumpur, Malaysia which was organized by World Economic Forum (WEF), ICT4D platform during WSIS2003 in Geneva (sponsored by SDC) and in 2005 in Tunis (sponsored by UNDP) (Raihan 2007).

3.1.2 Some Research work related to Tele-center:

Akhter (2012) conducted a research on the role of telecenters in Bangladesh to develop rural community beyond the access to information. As per research, Youth Community Multimedia Centre (YCMC) located in Sitakund upazilla of Chittagong district has been established by non-government organization named Young Power in Social Action (YPSA), developed out of a UNESCO supported project on ICT innovations for poverty reduction in 2004. It was established with a combination of traditional technology like radio, TV and newspapers and new technologies such as computers, internet, photocopiers and digital

devices like video camera, scanner and printers. In the article, Heeks (2005) information chain model is used to analyze the ICT4D in YCMC. The article provides four aspects 'situated success, 'information culture and tradition', 'typology of resources' and 'functioning' to understand the role and impact of telecenter in rural area of Bangladesh.

Salam (2013) assessed efficiency and implications of District E-Service Centers of Bangladesh and its role of promoting good governance through E Governance. Efficiency of DESC was assessed by choice & consultation, courtesy & consultation, openness & transparency, entrance & information, and value for money while the level of citizen satisfaction was measured through attenuation of corruption, intensity of clarity, efficiency of service, level of convenience, extent of accessibility and altitude of interaction. The good governance is assessed by accountability, transparency, responsiveness, rule of law, effectiveness and participation (Salam 2012). The study found the DESC provides public services efficiently, the e-service delivery has positive impacts on citizen satisfaction and the e-governance initiative leads to good governance promises. It is proved that e-government show the way for good governance by the study.

Abdulwahab & Dahalin (2011) completed a research on Effectiveness of Telecentre using a Model of Unified Theory of Acceptance and Use of Technology (UTAUT) in Nigeria. They found in the study that user acceptance of telecenter was demonstrated by performance expectancy; social influence, management effectiveness, program effectiveness and facilitating conditions. The findings of this research provide implications for the research and practice of telecentre development and implementation in developing countries. (Abdulwahab & Dahalin 2011).

Saeed (2012) accomplished a research on 'E-Governance Service Delivery - An Assessment of Community Information Center Model in India'. The study investigated the demand-supply matching of e-governance services rendered under the CIC model from the perspective of the providers, users and community people. The study observed that there is gap between the level of demand and the level of supply in respect of e-governance service by CICs, as perceived by the service providers, service users and Community People. He

also commented that the positive message is that there exists high level of demand for e-governance service in the rural as well as tribal areas. E-governance service delivery under community information centre (CIC) model in India needs a revamp as he concluded in the study.

There are very few researches on Union Digital Centre (UDC), formerly known as Union Information Service Centre (UISC) in the context of Bangladesh. There have some articles about the Union Information and Service Centers (UISC) also as it was found. Gofran (2014) has conducted a research on assessment of Union Information and Service Centers (UISC) in Bangladesh from beneficiary perspective. The study is based on 'Stage Model' frame work and informational, interactive and transactional services provided by UISC are considered for the study. The study mainly assesses impact of UISC in BD from citizen perspective in providing benefits of E government and bridging the digital divide. In conclusion, the study argued, despite some limitations the UISC has the potential to reduce time, distance and cost in service delivery. Its delivery mode is hassle free, immune from the reign of intermediaries and it does not ask for extra documents or coerce with bribes. It also has proven to be effective in improving in governance of delivery such as establishing transparency and accountability, non-corruption, efficiency and error free documents. The provider is empathetic to the recipients since he has to live by means of earning from customers. Therefore, people value the UISC more compared to the alternative delivery points (Gofran 2014).

In 2014, report on a census of UISC carried out by Bangladesh Bureau of Statistics (BBS), in partnership with the government's Access to Information (A2I) Programme, endeavours to provide an evaluation of UISCs as last mile service delivery agents. It is found by the UISC census that out of a total 4,547 union parishads, 4,492 UISCs are reported to be functional with 41 inactive. The census expressed the views as the role and functions of UISCs as the last source of information reservoirs and service delivery agents, whose role will be unparallel to local level sustainable development tools. Data presented in this Census will allow exploration of more information and services towards connecting citizens,

especially those at the bottom of the geographic pyramid residing and working in rural and remote areas, with the entire government machinery (BBS 2014).

Ekram (2015) has conducted a research about ‘The effect of Union Information and Service Centers (UISC) on Education and Information System in Rural Bangladesh’. It is found in his study that the establishment of UISC at union level creates an opportunity for greater access to the information system and educational facilities for the underprivileged population of rural BD.

In summary, it is seen that most of the researchers have worked on relationship of telecenter as a learning hub through receiving livelihood information in village people. Effectiveness of telecenters in different countries like Malaysia, Nigeria has been measured by different researchers. In those cases Technology Acceptance Model, Unified Theory of Acceptance and Use Technology theories have been used mostly. But in Bangladesh, few work on UISC have been accomplished by different researchers regarding relationship between ICT use and poverty reduction, Impact of ICT on education and increasing knowledge, reducing gap between rural and urban people, E-service delivery and good governance etc. In most of the thesis concluded as the UISC centers are playing positive role for increasing knowledge and economic benefit of rural people within some limitations. So, assessing effectiveness of UDC in Government Service delivery is very motivating issue to a researcher in Bangladesh.

3.2 Theoretical framework:

3.2.1 E- Government: E-government is defined as a way for governments to use the most innovative information and communication technologies, particularly web-based internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. E-government presents a tremendous impetus to move forward in the 21st century with higher quality, cost-effective, government services and a better relationship between citizens and government (Fang Z, 2002).

3.2.2 E- Governance: It is an ICT based governance system where people get the services in better way. In practical aspect it is told that it includes whole people of the country get their desired services through electronic means. E-Governance is a term which refers to the governance system by using the ICT tools to provide the better service delivery among the people. The aim of e-governance system is to create a knowledge- based society for the betterment of the country (Saugata and Masud, 2007). E-governance is beyond the scope of e-government. While e-government is defined as a mere delivery of government services and information to the public using electronic means, e-governance allows citizen direct participation of constituents in political activities going beyond government and includes E-democracy, E-voting, and participating political activity online. So, most broadly, concept of E governance will cover government, citizen's participation, political parties and organizations, parliament and judiciary functions. Harris (2000) summarizes the e-governance as the following: E-governance is not just about government web site and e-mail. It is not just about service delivery over the internet. It is not just about digital access to government information or electronic payments. It will change how citizens relate to governments as much as it changes how citizens relate to each other. It will bring forth new concepts of citizenship, both in terms of needs and responsibilities. E-governance will allow citizens to communicate with government, participate in the governments' policy-making and citizens to communicate each other and to participate in the democratic political process. Therefore, in broadest sense, E-governance has more implications than E-Government.

As per (Fang Z, 2002) one of the most important aspects of E-government is how it brings citizens and businesses closer to their governments. There are different types or models in an E-government system that is useful to define scope of E-government studies are: Government-to-Citizen (G2C); Citizen-to-Government (C2G); Government to- Business (G2B); Business-to-Government (B2G); Government-to-Government (G2G); Government-to-Nonprofit (G2N); Nonprofitto- Government (N2G); and Government-to- Employee (G2E) etc. Among them the paper is concerned mainly about G2C and C2G model. The two models are defined as: 1) Government-to-Citizen (G2C): Provide the momentum to put public services online, in particular through the electronic service delivery for offering information and communications; 2) Citizen-to-Government (C2G): Provide the momentum

to put public services online, in particular through the electronic service delivery for exchange of information and communication.

3.2.3 E- Service: ‘E-Service’ shortened from Electronic Service which refers to any service that is provided by any electronic means: internet/website, mobile devices or kiosk. In layman term, it can be understood as getting things through “E” or service poses through E that is electronically, which can be computer, internet. Rowley (2006) defined E-Service as: “Deeds, efforts or performances whose delivery is mediated by information technology (including the Web, information kiosks and mobile devices). Such E-service includes the service element of e-tailing, customer support and service, and service delivery. According to Goldkuhl & Persson (2006a), E-service means that an external user (a citizen) interacts through a user interface of a public IT system based on web technology. All the definition focuses on 3 components: service providers, the channel for service delivery technology and service receivers.

3.2.4 E-Governance: Service Delivery Approaches: As per (Misra 2006) the E-government function is not any free-floating function in cyber space. It has a definite objective: to transform government. This objective is based on two basic premises: first, current government functioning, as exhibited by its public service delivery, is far from satisfactory. And, secondly, government can perform better, aided by the existing and emerging information and communication technologies (ICTs). Modern governments are steadily transforming from the traditional department centric model to a citizen centric model for delivering services (Shapiro, 1999). For public service delivery two approaches: Agency Centric Approach and Citizen Centric Approach are discussed in a short.

Agency-Centric and Citizen-Centric Approach: Agency-centric approach of e-governance is also known as department centric. As per (Al-Khouri cited as Salam 2011), in a department centric approach, citizen needs to interact with each department separately causing inconvenience and inefficiency. Moreover, any services that requires approvals or intervention of more than one department, would take a long time to complete the service. On the other hand, there has been a distinct shift between the agency-centric and citizen

centric approach in service delivery. A citizen-centric government is something much more fundamental than simply a collection of departments providing services to citizens. It involves rethinking the entire service delivery system-across all agencies, and all levels of government-from a citizen perspective. Moreover, user needs typically cut across the organizational structures and hierarchies of government. So a true citizen focus requires a holistic approach, appreciated by all the levels of government. The study concerned with citizen-centric approach instead of the agency centric approach as e-governance model of public service delivery.

UDCs are one stop service outlet like telecenter which are the concept of private organization mainly. In Bangladesh UDCs are unique due to its set up condition under ppp modality. The telecenters are widely used in different countries in the world and effectiveness of those centers has been finding out by using different models. To understand the relevant framework a Technology based self service model is discussed below.

3.2.5 Dabholkar's attribute-based model:

According to Dabholkar (1996) speed of delivery, ease of use, reliability, enjoyment and control are significant attributes that TBSS (Technology Based Self Possesses). These five attributes are important for the customers to evaluate the TBSS and its use. This attribute-based model is seen as a general instrument of measurement for the TBSS and has a cognitive approach of the customer's decision-making process. The attribute-based model has a positive correlation with the customers' expected service quality. In the following model (Figure 2.1), it can be seen that the different attributes influence the expected service quality which leads to intentions to use TBSS.

The original attribute-based model

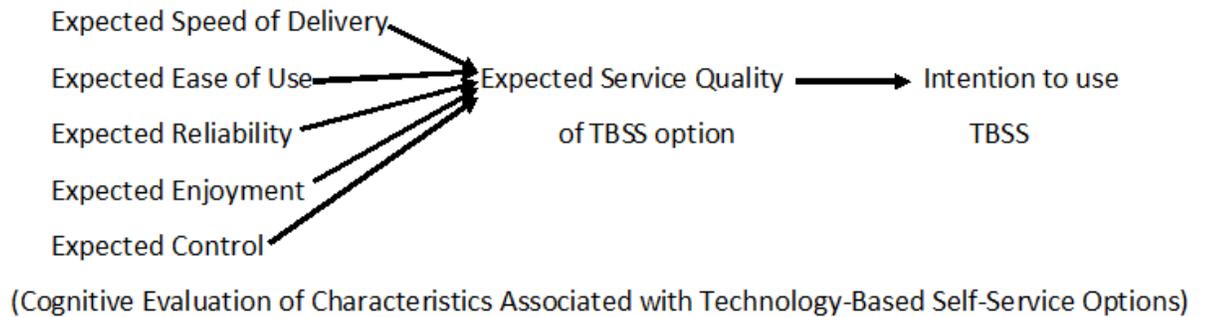


Figure: 3.1The attribute-based model, source: Dabholkar (1996)

The constructs used in above model are very much relevant with the study in this regard user's satisfaction depends on service quality also. Though UDCs are technology based innovative centre but it is not self service completely. There are two kinds of users use the center. So, some other models are discussed.

3.2.6 Technology Acceptance Model (TAM):

Adopting a new technology is always a challenge for common citizen. The model deals with how users tend to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. The two most important factors of using the new technology are: Perceived usefulness and perceived ease of use. These are defined as;

Perceived usefulness: Fred Davis defined it as "the degree to which a person believes that using a particular system would enhance his or her performance".

Perceived ease-of-use: Davis defined this as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). Actually almost everything can be made as easy as water.

The figure depicted as below:

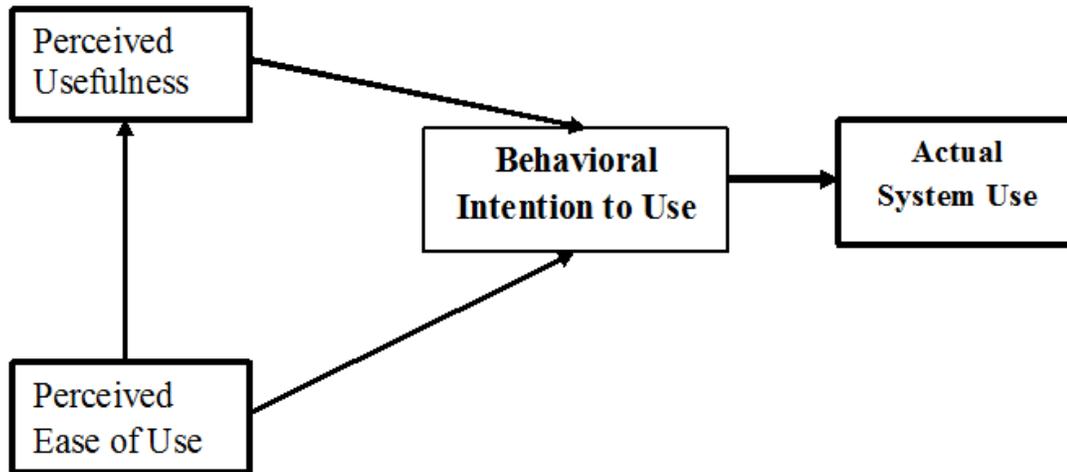


Figure 3.2 Technology Acceptance Model Source: Davis. et. al. (1989), Venkatesh et. al (2003)

3.2.7 The Unified Theory of Acceptance and Use Technology (UTAUT):

UDCs are one stop service outlet like telecenter which are the concept of private organization mainly. In Bangladesh UDCs are unique due to its set up condition under pppp modality. The telecenters are widely used in different countries in the world and effectiveness of those centers has been finding out by using different models.

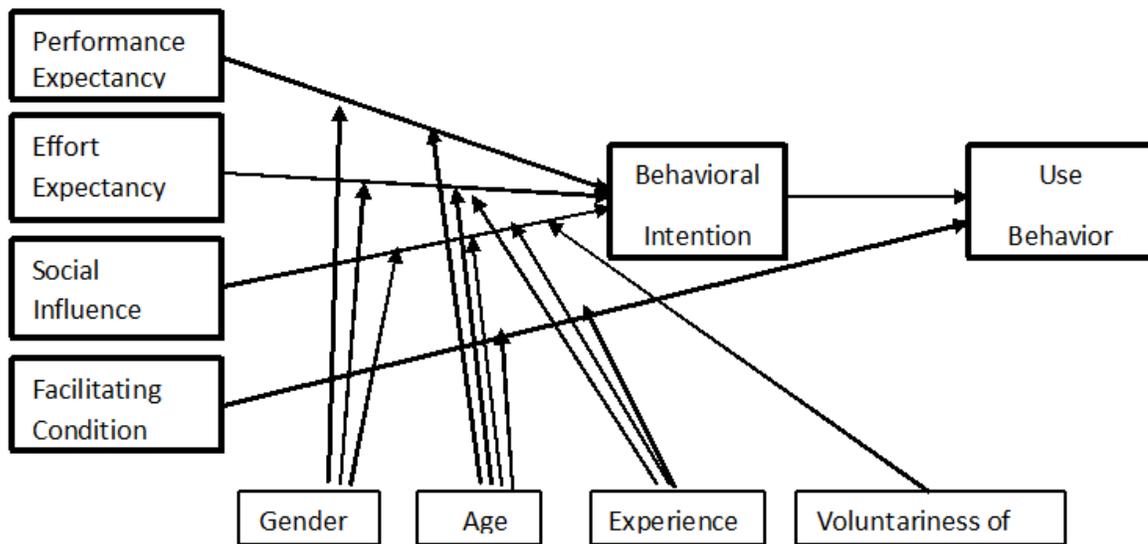
The Unified Theory of Acceptance and Use Technology (UTAUT) proposed by Venkatesh et al., (2003) are used to find out the user acceptance to new technology. UTAUT has distilled the critical factors and contingencies related to the prediction of behavioral intention to use a technology and technology use primarily in organizational contexts. While the various studies contribute to understanding the utility of UTAUT in different contexts, there is still the need for a systematic investigation and theorizing of the salient factors that would apply to a consumer technology use context (Venkatesh et al., 2012).

The theory has been derived through the incorporation of eight famous Models/ Theories in the diverse discipline. As per (Abdulwahab & Dahalin 2010) the Models/Theories were integrated in terms of their conceptual differences as well as empirical resemblances (Jackson, Park & Probst, 2006). The idea behind the unifications of these Models/Theories

is to arrive at the unified view of user acceptance of IT (Venkatesh et al., 2003). The eight Models/Theories used, include the Theory of Reasoned Action (TRA) Fishbein and Ajzen (1975), Technology Acceptance Model (TAM) Davis (1989), the Theory of Planned Behavior (TPB) Ajzen (1991), the Diffusion of Innovation Theorem (DOI) Rogers (2003), the Social Cognitive Theory(SCT) Bandura (1986), the Motivational Model (MM) Davis, Bagozzi and Warshaw (1992) and the Model of PC Utilization (MPCU) (Thompson, Higgins & Howell, 1991). Also the Combined TAM and TPB (C-TAM-TPB) Taylor and Todd (1995) is also applied to derive the theory of UTAUT (Abdulwahab & Dahalin 2010).

The theory has four key constructs which influence the behavior of consumers to accept and use the technology. Those four key constructs are Performance expectancy, Effort Expectancy, Social Influence and Facilitating Condition.

The model can be depicted as below:



Source: The UTAUT Model (Venkatesh et al., 2003, p.447)

Figure:3.3 Model of Unified Theory of acceptance and users Technology

Different variables used in the theory that are expressed as follows:

Performance Expectancy: Performance expectancy is defined, as the degree an individual user believes that using the Telecentre will assist in enhancing his/her performance

(Venkatesh et al., 2003). This construct was reported as the most influential among all the UTAUT in predicting behavioral intention and remains significant at all point of measurement regardless of environmental settings (Venkatesh et al., 2003 as cited by Abdulwahab & Dahalin 2010).

Effort Expectancy: Effort Expectancy is related to the degree of simplicity associated with the use of Telecentre (as cited by Abdulwahab & Dahalin 2010).

Social Influence: Social Influence is defined as the extent to which an individual user perceives that important other believe he or she should use Telecentre (as cited by Abdulwahab & Dahalin 2010).

Facilitating Conditions

Facilitating conditions are defined as the degree to which a user believes that an organizational and technical infrastructure exist to support use of Telecentre (Venkatesh et al., 2003 as cited by Abdulwahab & Dahalin 2010)

Behavioral Intention

The Behavioral intention construct originated from the Theory of Reasoned Action (TRA) by Fishbein&Ajzen,1975. The construct is defined as “a measure of the strength of one’s intention to perform a specified behavior” (Ajzen, 1991). Research has shown that behavioral intention has a direct impact upon the individuals’ actual use of a given technology (Ajzen, 1991 as cited by Abdulwahab & Dahalin 2010).

User acceptance

Use behavior is used in this study as the indicator of user acceptance. Study by Venkatesh et al., (2003), focuses on individual acceptance of technology by using intention or usage as a dependant variable.

3.3 Analytical Framework Discussion

The study has revealed the effectiveness of UDC in providing government services to the rural people. As per business dictionary the definition of effectiveness is ‘The degrees to which objectives are achieved and the extent to which targeted problems are solved’. The broad objectives of UDC are 1) Ensure easy access of common people to ICT facility 2) Building infrastructure for ICT in rural level and 3) Creating partnership among various services through ICT. Here, the study has revealed the effectiveness of UDC for providing government services. In UDC, it is found two kinds of users, first, the service providers, who use the ICT facility directly. And the service receivers or customers or beneficiaries who take the service from those service providers through indirect use of ICT facility. If service receivers are satisfied then it is told that they have easy access in ICT facility as well as it can be helpful for survival of UDC. On the other hand, if entrepreneurs or service providers are satisfied then it ensures smooth delivery of service also. If SPs are dissatisfied, then they will reluctant to smooth service delivery and improve the situation. They will leave the centre if they get other opportunity of business. So, how entrepreneurs use the UDCs and how effectively they can perform their job are the considered matter in the study.

Moreover, without sound infrastructure of ICT smooth delivery of service is not possible. Poor infrastructure of UDC also leads dissatisfaction for both the SP’s and SR’s. In other word, it is told that if the users feel satisfaction regarding the center they accept and use the center positively and it is known that they have easy access in ICT facility.

If both the users of UDC are satisfied about the center then the usage of the ICT based center will be ensured and the UDC will be effective. So, effectiveness of UDC has been measured through levels of satisfaction of service providers and service receivers. Satisfaction of SRs was dependent on demographic factors (Gender, religion, age, education, occupation, supportive factors (Infrastructural condition) and service receiver’s expectancy (major expectation about UDC services) about UDC. Satisfaction of SPs was dependent on supportive (Infrastructural) factors and service provider’s expectancy (major expectation about the job at UDC) of UDC.

By analyzing the Demographic Factors of SRs it is possible to understand whether common people are able in using ICT through UDC or not. For analyzing the Demographic Factors of common villagers of UDC, demographic factors like gender, religion, age, education and occupation have been considered for the study. As per (Dabholkar et al. 2002) age is one of the relevant aspects of demographic factors. For instance, young customers tend to use and adapt to TBSS more likely than older customers do (Dean 2008). Another relevant aspect is gender, where the differences in it have been noted in the adoption of technology. For instance, women have for example phobia and anxiety attitudes towards technology, while men are more open to using technology (Lee et al. 2010). As UDC is a new concept of ICT usage in rural area the demographic factors: gender, religion, age, education and occupation may affect the use of the center.

Infrastructural support, environment and verities of service are very important for smooth delivery of service. It is directly involved with satisfaction of Service providers and service receivers. As for example, if electricity is not available in the center is it not possible to speedy delivery of service. If location of UDC is not secure enough, people especially women will try to avoid the center. Again, another objective of UDC is creating ICT facility in rural level. Good infrastructure of UDC can help to create the ICT facility in rural area. Indicators of Institutional Factor are Environment, Equipment facility, Power Supply, Internet connectivity and service availability.

The theory of UTAUT is used to find out the user acceptance where use behavior is the indicator of User acceptance in using the new technology. Again technology of UDC consist some nature of TBSS. So variables used in Dabholkar's Attribute Based models have many similarities with UTAUT model. Here, the goal of the study is to find out the effectiveness of UDC through users satisfaction in using the UDC.

Yang (2001) argues that customers reach satisfaction decision by comparing the performance a product or service with their prior expectations. If performance exceeds the expectation positive disconfirmation occurs and increases in satisfaction can be expected to take place. Customer satisfaction is collective outcome of perception, evaluation and

psychological relations to the consumption experience with a product or service (as cited in Salam 2012). Cox and Dale (2001) laid down six dimensions of online relating service quality with the comparison of the traditional dimensions of service quality such as website appearance, communication, accessibility, credibility, understanding and availability. So, the independent variables that are relevant with effectiveness of UDC are Demographic Factors, Institutional Factors, Service Receiver’s Expectancy and Service Provider’s Expectancy. Level of effectiveness of UDC is the dependent variable which has been derived by the satisfaction level of users. Satisfaction of users in UDC depends on four independent variables: Demographic factors and Supportive factors, Service Receiver’s Expectancy and Service Provider’s Expectancy.

In the light of conception of theory UTAUT, Dabholkar’s attribute-based model and considering customer satisfaction points of view discussed above, the following analytical framework has been made.

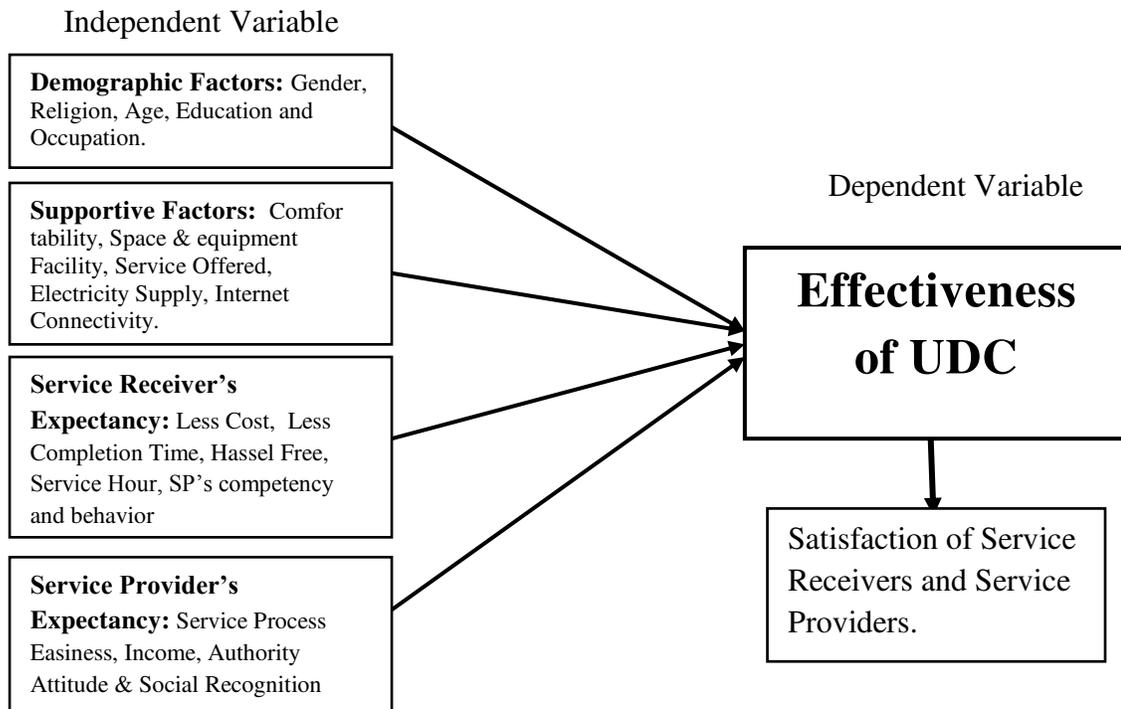


Figure: 3.4: Analytical Framework for Effectiveness of UDC

Operational definitions of variables used in analytical framework:

Government Service: UDC provides 3 kinds of services: government service like birth registration certificate providing, commercial service like online visa application and information service like agriculture related information and so on. The main government services that are provided by the UDC are the research area in the study. It also excludes both commercial and information service.

Effectiveness of UDC: UDC has two kinds of users: service providers and service receivers. Service providers use the ICT facility directly. On the other hand, service receivers do not use the technology directly but take support the ICT facility through service provides. If both the users of UDC feel satisfaction after using the ICT supported center, then they use the center with positive attitude and then it will be called effectiveness of UDC.

Demographic factors: Demographic factors that may affect the satisfaction level where Gender, Religion, Age, Education and Occupations are considered as indicators of the variable.

Supportive Factors: Availability of physical infrastructure and other technical equipments like laptop, printer etc. and facilities like power supply, internet connectivity that helps directly to run the center. It also includes presence of different government services in the center.

Service Receivers' Expectancy: Customers' opinion to overall service delivery that is customers' opinion to service quality, cost effectiveness, competency and attitude of service providers.

Service Providers' Expectancy: Service providers' opinion to job process that is whether the steps of job process are simple and easy to understand, income that is whether it is satisfactory, behavior of UP members and central authority of UDC. It also includes social respect to job providers from their own point of view.

Service Receivers' Satisfaction:In the study it depends on demographic factors, supportive factors and SR's expectancy about the service. They expect good environment of service delivery place, prompt and quality service with reasonable cost. Prompt and quality services also depend on competent and helpful SPs.

Service providers' satisfaction: In the study it depends on supportive factors and SP's expectancy about the job. If income is good they feel satisfaction. If people respect the job it creates satisfaction also. Again, independent working environment, easiness of working procedure may create satisfaction too.

Table 3.1: Variables and indicators used in analytical framework at a glance:

Dependent variable	Indicator	Independent variable	Indicators	Measuring Indicators
Effectiveness of Union Digital Center	Satisfaction of Service Providers and Receivers	Demographic Factors	Gender Religion Age Education Occupation	Specific Age Male or female Different religion Level of education Different occupation
		Supportive Factors	Comfortability Space facility Equipment facility Power supply Internet connectivity Service offered	Safe, easy access Available space for waiting Existence of laptop, modem, printer, generator and so on. Uninterrupted electricity Supply Speedy connection Existence of various government services
		Service Receiver's Expectancy	Service completion time Service cost Hassel free service Service hour Competent staff Behavior of staff	Waiting time for completion of desired service Cost of desired service Getting the service easily Service hour for getting the service Prompt delivery of service Friendly attitude of staff
		Service Provider's Expectancy	Service process easiness Earnings Authority attitude Social recognition	Understandable and easy to use Satisfactory Income Attitude of UP members and related authority like UNO, ADC & BCC. Attitude of society to service providers

Chapter 4

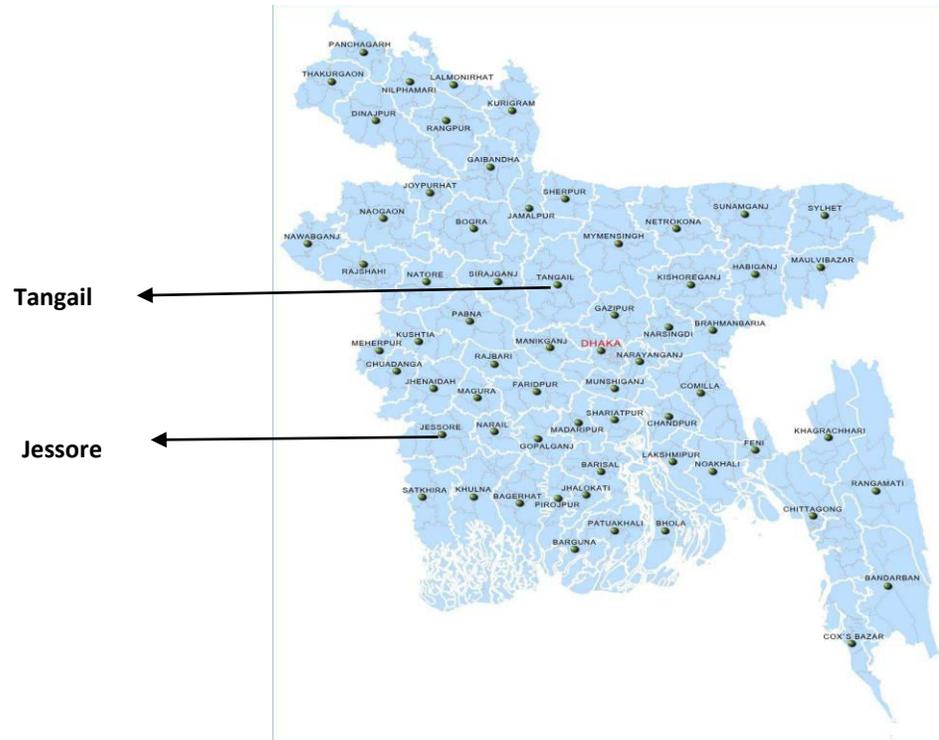
Methodology

4.1 Research Method:

Both qualitative and quantitative methods have been followed in this study. Qualitative approach provides room for discussions between the researcher and participants which allows capturing insights and direct understandings from participant's perspective. In other words, qualitative study allows for in-depth analysis. The mixed method overcomes the disadvantages of qualitative and quantitative methods and benefits from the advantages of each. A combination of Questionnaire Survey, Interview and Observation methods have been used in the study. The combination of the stated methods is intended to use for this research to take advantage of their respective strengths and overcome the limitations of others. It also helps to reduce bias of any single method. Combination of these three methods is expected to be a reliable tool for the study. Combined method enables us to explore, unravel and understand problems, issues and relationships (Aminuzzaman 1991). The interview method has been taken to gather clear idea on the issue by providing insight into conversations. Observation method has been used to watch the overall fact which helped to explain the issue. Data has been processed and analyzed synthetically and statistically.

4.2 Selection of Study area:

Bangladesh is largely homogenous country with 89.5% Muslims and 8% Hindus. About 98% people talk in Bengali (mundi online). There have no significance difference among the inputs of outputs of UDCs. Especially establishment, operation procedure, and nature of activities are almost same. Some problems faced by SPs and SRs are also similar. Within a very short time, research on four centers may carry a good outcome. Considering above condition the study has been conducted the survey on 2 districts Tangail, and Jessore. Jessore is 190 Km south west away from Dhaka and Tangail is 118 km away from Dhaka. Some basic information and map of the country is given below:



Map of Bangladesh. Source: (Salam 2012)

Table 4.1 short introduction about survey districts

Name of the District	Area (Sq. Km.)	Population	Name of Upazila	Remarks
Tangail	3414.35	3605,083	Ghatail	Two UDCs from one remote upazila.
Jessore	6674	2764,000	Bagherpara	Two UDCs of Ist digital district.

Source: www.jessore.gov.bd, www.tangail.gov.bd accessed on 19.2.2015

4.3 Sample Size:

Sample size is 74. A number of 60 respondents (15 from each area) will be taken for questionnaire survey. For in-depth interview total 12 persons (6 persons from each area) and 2 specialists from a2i programme has been conducted in the survey.

Table: 4.2 Sample distribution criterions

Area	Survey	Interview		Total
		Service Providers	Others	
Tangail	15*2	3	3	36
Jessore	15*2	3	3	36
Specialistt from a2i		2		2
Total	60	14		74

The interviewee's list is given below:

Table: 4.3 List of Interviewee

SI No.	Description	Area
1	6 Service Providers from related UDC.	Bagharpara and Ghatail Upazila.
2	6 UDC related Government Official like UP members & UNO.	Bagharpara and Ghatail Upazila.
3	2 Specialists from a2i programme.	a2i Prrogramme and cabinet Division of GoB.

3.4 Sampling Method:

Random sampling technique has been followed for survey of service receivers' data and purposive sampling technique has been followed for others.

3.5 Sources of Data, Data Collection Techniques and time frame of the research

Primary data for the study has been collected from primary source through survey, interview and observation methods. But content analysis has been used for analyzing the data. Research has been completed in six months; first two months were for data collection, next two months for data analysis and last two months for report writing.

Table 4.4 Data and collection techniques and time frame matrix:

Data Source	Data Collection	Time Frame (2015)
Survey	Collecting information according to designed questionnaire from 60 respondents. Questions will be both open ended & close ended.	August, 15-September, 15
Interview	Taking interviews of selected 6 SPs and 6 officials and 2 experts according to structured questions.	
Observation	Observing the working environment, interpersonal relationship and nature of work.	
Different books, journals, research articles, dissertation reports, policy documents, reports of Government of Bangladesh will be considered for preparing and analyzing the report.		

Chapter 5

Linking Factors behind the UDC Effectiveness

To find out and analyse the factors that affect the effectiveness of UDC is the main intention of the research. In this connection level of effectiveness has been measured by the methodology discussed above. At first demographic factors of SR's are presented in general manner. Then findings about dependent variable and independent variables are discussed sequentially with some relevant analysis with the help of data table, graph. Finally critical analysis has been made on data collected to find out the linkage between dependent and independent variables. As a result the factors affect the effectiveness of UDC has been identified by the discussion.

For quantitative method the data has been processed by using different statistical tools with the help of SPSS. The Qualitative information has been followed the descriptive discussions. Observation method has been followed to explain the fact more critically. Finally mixing the results and discussion, logical analysis has been used to reach answer of the research questions.

Scale Construction:

For the purpose of assessment of effectiveness of UDC regarding government service delivery from service receiver's perspective, the following scale is constructed:

Scale	Institutional Factors	Service Receiver's Expectancy	Service Receiver's Satisfaction
9	Do not know	Do not Know	Do not know
4	Very Good	Completely Agree	Very High
3	Good	Agree	High
2	Poor	Disagree	Low
1	Very Poor	Completely Disagree	Very Low

Table.5.1: Five point scale for measuring the effectiveness of UDC

Quantitative data obtained from 60 Service Receivers of 4 UDC in two Districts: Tangail and Jessore. The data was collected through August 15 to September 15 in 2015.

The study considers four independent variables: Demographic Factors and Institutional Factors, Service Receiver’s Expectancy and Service Provider’s Expectancy on which satisfaction of users of UDC depends directly. UDC has two kinds of user’s: Service Receivers and Service providers. Effectiveness of UDC has been derived through satisfaction of both the users of it. Quantitative data has been collected through questionnaire survey from 60 service receivers who are the respondents of SR’s satisfaction analysis. Again qualitative data has been collected from related UDC service providers through structured and semi structured open ended questions of in-depth interview. At first demographic factors of quantitative survey are discussed minutely where data has been processed by SPSS program and Ms Exel 2007.

5.1 Demographic Factors of SR’s:

In the study five indicators of Demographic Factors has been considered. Those are Gender, Religion, Age, Education and Occupation. Indicators of Demographic Factors of Service Receivers are analyzed significantly:

5.1.1 Gender Distribution of Service Receivers: The total number of service receivers was 60. The distribution of service receivers as per gender is presented by the table:

Gender	Percentage
Male	65%
Female	35%
Total	100%

Table5.2 Gender of the Service Receivers (n=60)

In Bangladesh half of the total population is female. As a patriarchic society of the country women do not feel very easy with the work out of their home especially in taking services from Govt. offices. Usually they take the service in favor of her/ her family members when

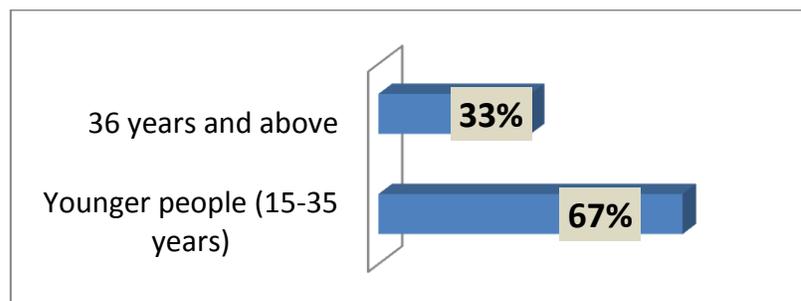
male family member is not available. Considering those points of view a significant number of women (35%) are taking services from the UDC.

5.1.2 Distribution of SRs in respect of Religion: The table given below presents the religion of service receivers. Muslim is about 89% and Hindu is about 11%. So, it is told that from Bangladesh perspective Muslims and Hindu representation is almost appropriate.

Name of Religion	Percentage
Islam	89%
Hindu	11%
Total	100%

Table5.3: Religion of the Service Receivers (n=60)

5.1.3. Age of SRs: Specific age was collected through data. It is categorized in 4 levels which are presented by the table:

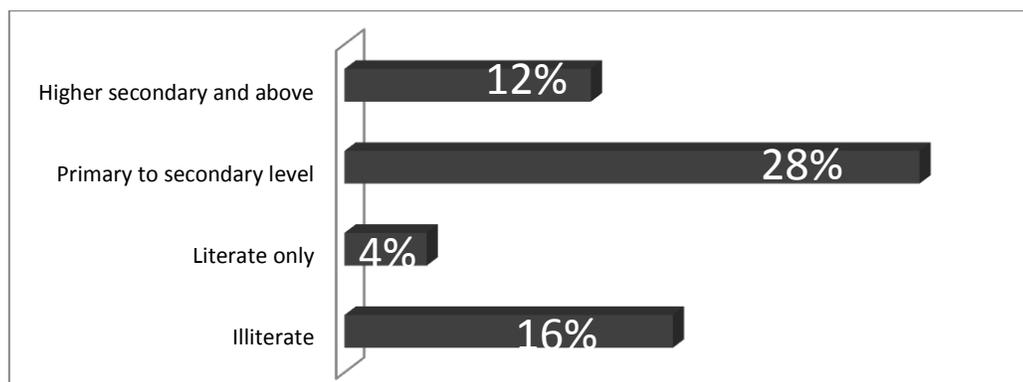


Graph.5.1: Different Level of Age of the SRs

Graph above shows that highest number of SRs (about 40%) is below 25 years of age. The distribution shows that 66% SRs are below 35 years of age. From the above table, it is also seen that younger people are significantly high among UDC service receivers.

5.1.4 Educational Status of SRs: Educational status of SRs was collected under 7 broad levels: a. Illiterate b. literate only c. primary level d. below secondary Level e. Secondary Level f. Higher Secondary Level g. Bachelor Degree or higher. It is categorized into 4 levels for simple analysis:

Graph 5.2: Educational status of SR's



The Graph shows about 26% service receivers are illiterate. So, a good number of service receivers are illiterate. The highest numbers of SRs are from primary to secondary levels. It shows that common people are using the UDC services.

5.1.5. Occupational status of SR: Occupational status of SRs was collected under 5 broad levels. Students, service, housewife and farmers are mentioned specifically among all levels of occupation. The rest occupations are categorized by 'others'.

Occupation	Percentage
Students	38%
Service	11%
House wife	16%
Farmer	10%
Others	25%
Total	100%

Table5.4: Occupational status of service receivers (n==60)

The table shows about 38% service receivers are students which is the highest among all. It is also mentionable that 16% SRs are housewife.

For demographic factors five indicators gender, religion, age, education and occupation of SRs has been considered for the study. The study shows 35% SRs are female. The country has about 50% are female among its total population. So, as a patriarchic society this is a

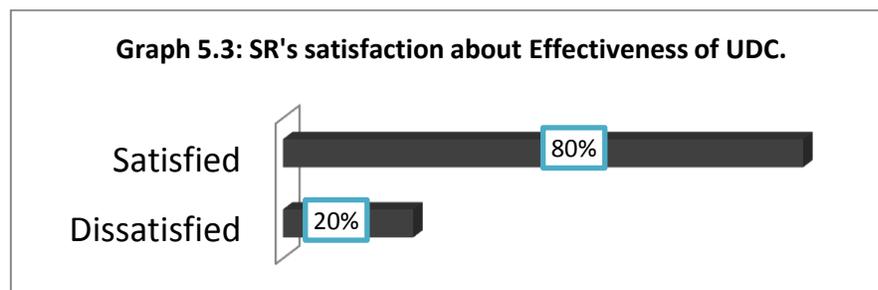
well representation for female. In the same way 11% SRs are Hindu. So, this is also rational presentation on the basis of religion because there are about 90% populations are Muslims in the country. It has been found from the study that SRs are different ages. The ages vary from 18 years to 65 years. One SR is about 103 years old. 20% SRs are from more than 45 years old. Again for educational background it has been found that 26% SRs are illiterate whereas 46% SRs are exceeded primary level only. Moreover, for occupational status the SRs are dominated by the profession of farmer, student, business even housewife. For occupation it is seen that 11% SRs are doing service whereas 10% SRs are farmer. So, from the above discussion it is told that common villagers are using the UDC services.

5.2 Satisfaction of UDC users:

Level of Effectiveness has been derived from satisfaction of service receivers and service providers. Quantitative method has been followed for satisfaction of service receivers (SRs) and qualitative method for service provider's (SRs) satisfaction.

5.2.1: SR's opinion about satisfaction of UDC:

Effectiveness of UDC has been derived through SR's satisfaction. The SRs of UDC have been asked the question as "In what extent you are satisfied in receiving government services from UDC?" Data were collected under four levels of SR's satisfaction as 'Very Dissatisfied', 'Dissatisfied', 'Satisfied' and 'Very Satisfied'. If the level of satisfaction is categorized in two levels for understanding simply where 'Very Dissatisfied' and 'Dissatisfied' are categorized as 'Dissatisfied' and 'Satisfied' and 'Very Satisfied' are categorized as 'Satisfied' then it is found that:



From the Graph it is clearly found that 80% SRs are satisfied about UDC where 20% are dissatisfied. So from SR's opinion it is found that UDC is effective mostly.

Again from in-depth interview of Service providers it is found that most of the SPs are satisfied about their entrepreneurship and all of them think UDC is effective in providing government services.

Commonly, the question is why these 80% SRs are satisfied and 20% SRs are not satisfied. What are the factors that affect the satisfaction of SRs and SPs of UDCs? To get the factors affecting the effectiveness of UDC first it should be analyzed what are the government services provided by UDC and what is the present status of those services?

5.3 Types of provided services:

Different types of government services received by SRs are:

- Birth registration certificate
- Death certificate
- Citizenship certificate
- Certificate from UP chairman
- Application for certified copy of land (Porcha)
- Application for rural electricity connection
- Application for passport
- Visa application for Malaysia
- Collection of examination result
- Application for admission at university
- Application for job
- Download of government form
- Get appointment with Deputy Commissioner (DC) etc.

All UDCs are not providing the same services. Application for certified copy of land (Porcha) and appointment with Deputy Commissioner (DC) are mainly provided in Jessore district. Application for passport is also not very frequent.

The services are divided into 3 types to analyse critically.

Name of the services received by SRs from UDC	Percentage
Certificates from chairman (birth, death, inheritance, citizenship etc)	70%
Other services (government form download, electricity connection, exam result, land related etc)	13%
Both types of services	17%
Total	100%

Table 5.5: Types of services provided by the four UDC (n=60)

So it is found that only different types of certificates are taken by 70% of SRs. One of the reasons behind it these services are mainly provided by the chairman of Union Parishad that is local government authority is usually solely responsible for the certificates. Among those services birth registration certificate is mandatory service for all UDC. In other word, all chairmen are to furnish the necessary power delegation of birth registration process to SPs of UDC in this manner. Chairman is the final signing authority but receiving application, processing and delivering it to SR's are done by SPs of UDC. Besides it some other services like application for certified copy of land (Porcha), application for rural electricity connection, application for passport, collection of examination result, application for admission at university etc. can be completed from other places.

The occupation wise received services are analysed by the table :

Table 5.6:SR's occupation and name of the services received by SRs from UDC Cross tabulation (n=60)					
		Name of the services received by SRs from UDC			Total
		Certificates from chairman(birth, death, inheritance, citizenship etc)	Other Services (government form download, electricity connection, land related etc)	Both types of services	
Occupation of the SRs	Student	52%	22%	26%	100%
	Service	71%	14%	14%	100%
	House Wife	100%	0%	0%	100%
	Farmer	83%	0%	17%	100%
	Other Occupations	71%	14%	14%	100%
Total		70%	13%	17%	100%

The table exposed that House wives are taking different certificates mainly. Some services like public exam result, government university admission etc are student oriented services. Besides it some commercial services like computer learning raining are provided by UDC which are usually student friendly program. As a result students are more aware about UDC services and come frequently at UDC. May be this is the reason behind students are taking various types of services from UDC.

So, government services provided by UDC are still not very high and it varies UDC to UDC. More than 80% SRs expresses that necessary equipments are available in UDC that is UDC is fully capable for online services. But number of services varies among UDCs. Only birth registration certificate is mandatory service for all UDC. Other services depend on union parishad chairman's willingness and UDC SP's capacity also. From the interview of service providers it is known that general people still have no clear idea about UDC services. They think only birth registration certificate is provided from here. The researcher observes that competency of SPs and mindsets of UP chairman are also responsible behind the variation

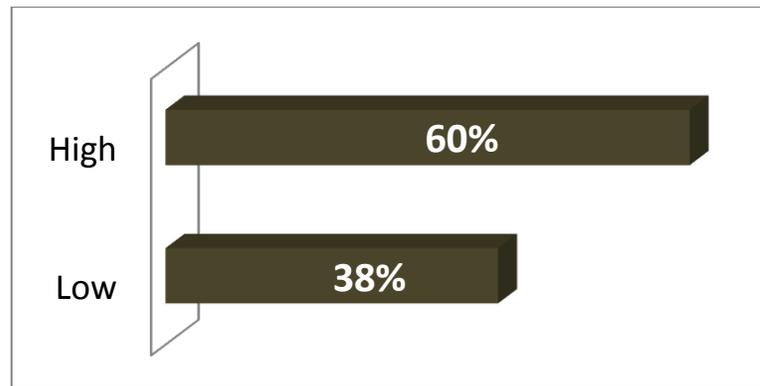
of services. From the interview of specialist (capacity development expert at UNDP project) it is also found that number of private service variation depends on entrepreneur but government service variation depend on UP chairman as well as other government offices like deputy commissioner's office. It is also known from the interview that several UNDP projects are working for increasing online government services generally. If online government services are increased then UDC government services will also increase automatically. Now the question is how much satisfied the SRs are about the status of government services provided by the UDC at present?

5.4: Present Status of government service:

Finding out the present status of government services provided by UDC is one objective of the research. In the above discussion the government services provided by UDC has been found. So, SR's satisfaction about those number and quality of service can explain the present status of government service. In this regard two questions are asked to the SRs. One question is related with number of expected government services in connection with independent variable which is also one of the indicators of supportive factors. The other question is service receiver's satisfaction regarding quality of existing government services delivered by the center connecting with dependent variable.

5.4.1 SR's opinion about expected number of government service:

UDC is providing 3 kinds of services such as government, commercial and information services. The study concerns mainly about government services. In country, few number of government services are provided through online. If SR's expectation is not very high then a few number of government services may create their satisfaction and vice versa. In this regard, the SRs are asked the question "In what extent UDC is providing sufficient government services as per your expectation?" Data were collected under four levels of SR's satisfaction as 'Very Poor', 'Poor', 'Good' and 'Very Good'. The SRs opinion about the question regarding supportive factors have been categorized in two levels 'Low' and 'High'. Here 'Low' represents 'Very Poor' and 'Poor' both and 'High' represents 'Good' and 'Very Good' both. So, SRs opinion about expected number of government services provided by UDC is as follows:



Graph 5.4: SR's satisfaction about expected number of government service

The graph shows that about 38% SRs consider number of government services as per their expectation is low. When the respondents are requested for further open ended opinion in favor of their answer some of them told that The SPs of UDC believe online supported infrastructure has been already made at UDC. They also comment that UDC is fully capable to provide online services like some people oriented services like Passport, land certificate copy (porcha) etc. Some SPs commented that they applied for passport through UDC. But it created extra hassle for SRs in passport office whether they have no mistake usually. As a result, the SPs discouraged SRs for providing the services. Same kind of comment has been found for application of land certified copy. The graph above also exposed that 60% SRs consider number of Govt. services provided by UDC is high. For answering in favor of their opinion some of them comment 'We are getting enough services from UDC in compare to previous days'. Now it should be known their level of satisfaction about the government services those are provided by UDC at present.

5.4.2 SR's satisfaction about government services delivered by UDC:

The SRs are asked the question "In what extent you are satisfied about the present status of government services offered by UDC?" Data were collected under four levels of SR's satisfaction as 'Very Poor', 'Poor', 'Good' and 'Very Good'. The SRs opinions about the answers have been categorized in two level 'Not Satisfactory' and 'Satisfactory where 'Not Satisfactory' represents 'Very Poor' and 'Poor' both and 'Satisfactory' represents 'Good' and 'Very Good' both.

The graph given below exposes that only 22% SRs express their opinion in favor of not satisfactory status of government services whether 73% SRs express their opinion in favor of satisfactory status. So most of the SRs (73%) think status of government services provided by UDC is either good or very good.

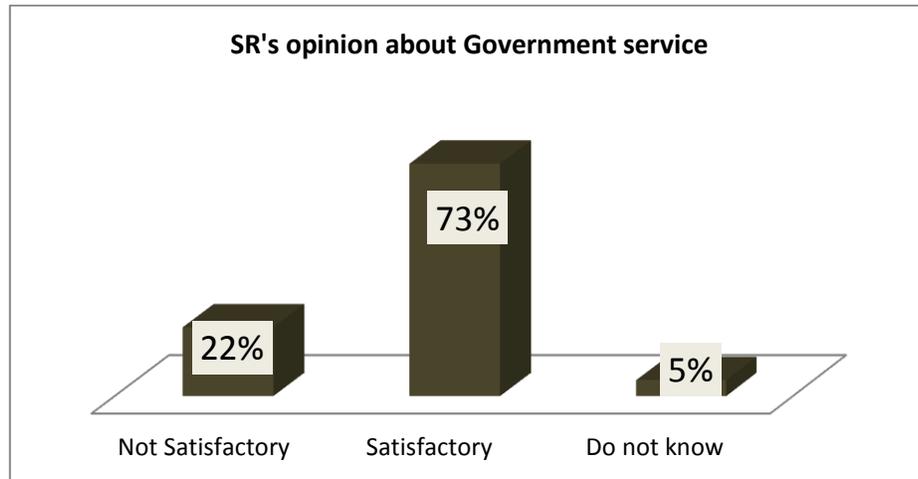


Table 5.5: SR's satisfaction about government services provided by UDC

About 73% SRs are ranked as either high or very high as present status of government service. Though 38% SRs consider expected number of government services is low but only 21% SRs consider condition of government service is low.

So, from the study it is seen as per 60% SR's opinion about expected number of government services is high but 74% SRs are satisfied with quality of government services delivered by UDC at present. So, from the data it implies that present status of delivered government service is good but SRs expect more government services from UDC. When the respondents are requested for further open ended opinion in favor of their answer some of them comment that "since online services are not available in the country so how UDC will increase their services?" They also expressed that within many limitations like electricity, internet speed SPs are working. The SPs are trying their best and in near future number of services will be increased. The SRs expressed their opinion by comparing to previous days. From the interview of specialist it is known that many initiatives (quick win) have been taken for changing the existing manual system government services into online computerized system. The common problems of government offices of the country are complex work procedure,

inefficient manpower, bureaucratic mindset etc. Innovative idea has been implemented to reduce the step of work procedure. At the same, computer based training are making the government officials competent for serving the online based jobs. Different training even abroad are also has been arranged for bureaucrats to change their mindset. As a result the service delivery situation is changing gradually.

Again, a strong relationship has been found about expected number of government service and SR's satisfaction where correlation value is 0.65 at 0.01 significant level. So, number of government service affects much at UDC effectiveness. The table given below explains the issue more significantly.

Table.5.7: SR's opinion about number of expected government service and satisfaction at UDC: Cross tabulation (n=60)				
		Satisfaction at UDC		Total
		Dissatisfied	Satisfied	
SR's opinion about no. of expected government service	Low	52%	48%	100%
	High	0%	100%	100%

The table exposed that the SRs who are dissatisfied about UDC, they also consider expected number of government service is low. In other words, there is no satisfied SR who thinks expected number of government service is high. It implies that there exists strong relationship between satisfaction and status of government service.

5.5: Factors Causing Satisfaction: Supportive Factors

Effectiveness of UDC depends on supportive factors of UDC mostly. If supply of electricity is very poor smooth delivery of service is not possible. Again, if environment of UDC is not comfortable then people especially women try to avoid the center. Supportive factors that directly affect the effectiveness of UDC are derived from six indicators. The six indicators of independent variable 'Supportive Factors' are Comfortability that is easiness of SRs in using UDC, Space availability, Equipment facility, Electricity supply, internet connectivity

and government service offered by UDC. Service receivers are requested about their opinion regarding indicators by the ratings Very Poor, Poor, Good, Very Good and Do not know. The SRs opinion about the questions regarding supportive factors has been categorized in two level ‘poor’ and ‘Good’. Here ‘Poor’ represents ‘Very Poor’ and ‘Poor’ both and ‘Good’ represents ‘Good’ and ‘Very Good’ both. The supportive factors that affect effectiveness are explained sequentially.

5.5.1. Comfortability of using UDC: Comfortability means how easy people feel about receiving service from UDC. People believe that government employees are more non cooperative than private employees for delivering of services. UDC is constructed under combination of both private and public sectors and providing both government services and private services. If environment of UDC is not safe for women then they usually avoid the center. But about 50% populations are women in the country. Without their usage of UDC, service at citizen’s doorstep is not possible. So, how much comfort usually people feel in receiving services from UDC is an important issue for easy access of common people as well as customer’s satisfaction. The SRs are requested to give their opinion about the question “How much you feel easy in taking services from UDC?”

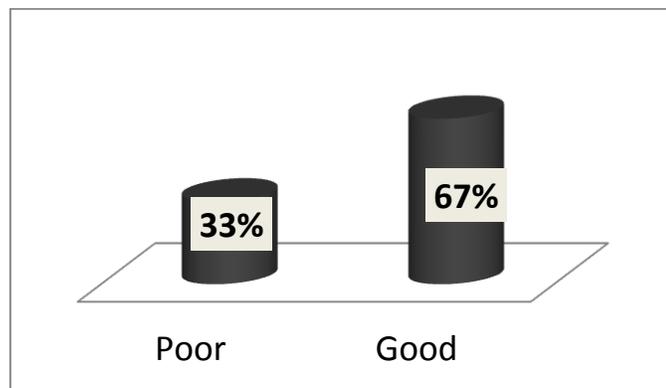
The table given below interprets the SR’s opinion regarding the question about comfortabilty:

Comfortability (safe and easy environment)	Percentage
Poor	5%
Good	95%
Total	100%

Table: 5.8 SR’s opinion about Comfortability of using UDC services (n=60)

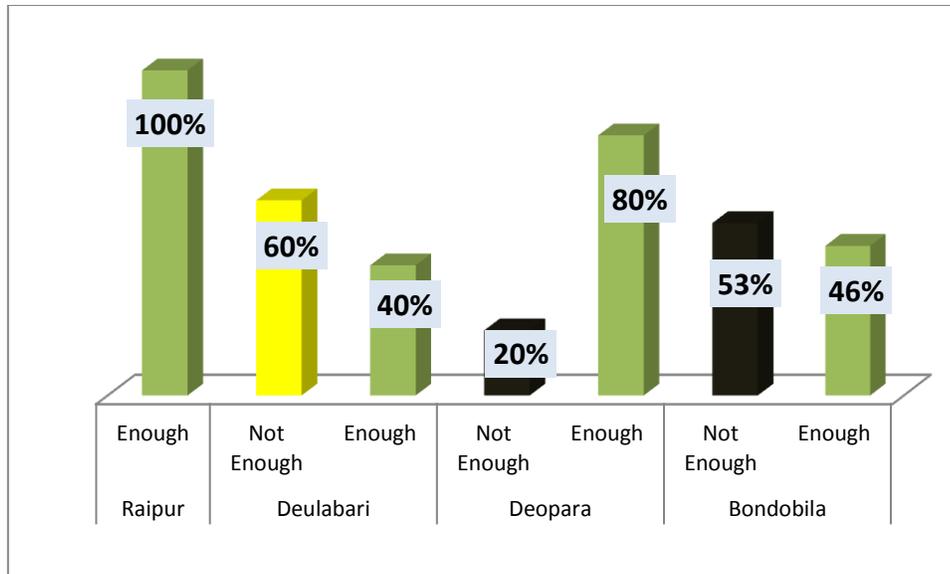
The table shows only 5% SRs are not comfortable at UDC. The rest SRs express their opinion in favor of good. It is also told that 40% SRs furnish their opinion in favor of very good environment of UDC.

5.5.2 Space facility at UDC: UDC is situated at union parishad building. Usually one room is allocated for maintenance of ICT facilitates equipments like laptop, computer and services. The room also accommodates two service providers. So, is there enough opportunity for using space for waiting of service receivers? If there has no good accommodation system then customer would be frustrated easily. In this connection, the SRs are requested to give their opinion about the question “In what extent UDC has enough spaces in favor of customer’s accommodation?” The table shows the opinion of SRs in this manner.



Graph 5.6: Condition of space facility for SR's using at UDC

The table expresses that about 33% SRs consider space for waiting is poor. Though 67% SRs consider UDC has enough space for their using but most of the service providers express that UDC has no enough space for using SRs. All the four UDCs are using one room for providing the services. So, space facility depends on the size of the room initially. But the SRs can use UP space simply so that 43% SRs express the opinion in favor of very good condition of available space for waiting in UDC services. If it is analyzed center wise then it can be explained more evidently:

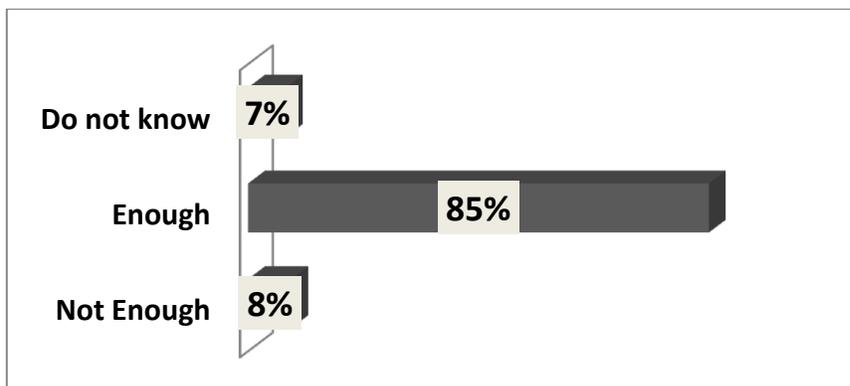


Graph 5.7: SR's opinion regarding space facility as UDC wise.

The Graph exposes that in Deulabari Union about 60% SRs express that space is not available here. The researcher observed that there has spaces in the room but no sitting arrangement for SRs in the center. SPs are reluctant about the arrangement for their own convenience. It may affect the SR's opinion regarding spaces. Again in Bondobila, the center is situated at very old building. Though there have sitting arrangements for two SRs but space in the room is very congested. SPs are conscious about it but they have no immediate solution regarding the matter unless building is renovated.

5.5.3: Necessary Equipment facility: UDC is ICT based innovation center which has been established under PPPP modality. ICT facilitate Equipments are provided by different institutions like BCC, upazila parishad even personal arrangements of SPs. It is found that two laptops are used in the center. One laptop and modem which is used for internet connection is usually bought by SPs of their own fund. As a result equipments in the center varies. So, how much capable the center is in providing online services is the important matter. In this regard, the SRs are requested to give their opinion about the question "In what extent UDC has enough equipment facility for online services?" Here 'Not enough' represents 'Very Poor' and 'Poor' both and 'Enough' represents 'Good' and 'Very Good' both.

SRs opinion has been presented by the graph below:

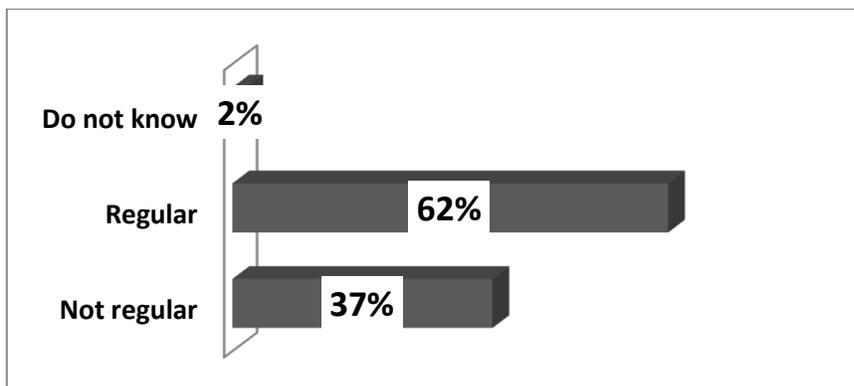


Graph 5.8: SR's opinion whether equipment facility

The graph exposed that only 8% SRs think UDC has no necessary equipments. Most of the SRs has expresses their opinion in favor of either good or very good facility. As per 85% SR's opinion online service supported necessary equipments are available in UDC. The service providers of four UDC express that necessary equipments are available in the center. Most of the equipments are provided by Bangladesh computer council, upazila parishad fund or by union parishad special arrangements. Some equipment is bought by them. But they maintain all the equipments in the center by their own source not by the government source. Sequentially, it is found that both the users of UDC SRs and SPs opine in favor of available equipment facility at UDC. So, the first step related of achieving second objective of UDC that is creating infrastructure for ICT in rural level is already shaped. The next related thing is connectivity which is discussed below.

5.5.4 Condition of Uninterrupted Electricity: Many villagers still live without electricity. Load shading of electricity is very common across the country. Without uninterrupted supply of electricity quick delivery of ICT based services are not possible. And delay of service delivery creates dissatisfaction among service users. In this connection, the SRs are requested to give their opinion about the question “In what extent UDC has uninterrupted supply of electricity for quick services?” Here ‘Not Regular’ represents ‘Very Poor’ and ‘Poor’ both and ‘Regular’ represents ‘Good’ and ‘Very Good’ both.

Condition of supply of electricity as per SR's opinion is given below:

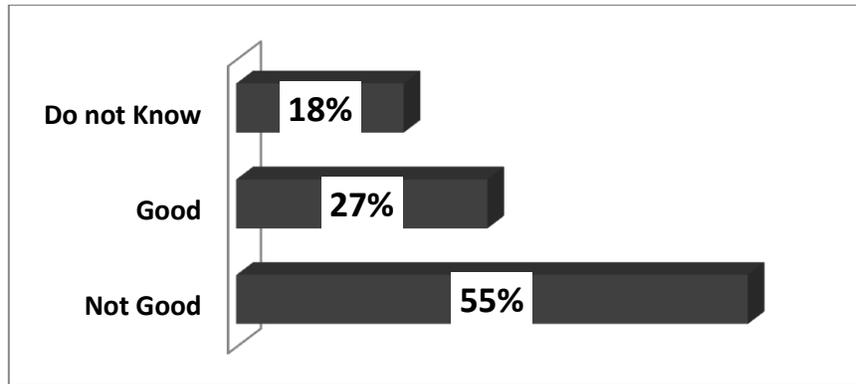


Graph 5.9: SR's opinion about uninterrupted electricity supply

The table above shows that out of 60 respondents 22 SRs opine electricity supply is either very poor or poor that is about 37% SRs are dissatisfied with electricity condition. Out of four UDC, solar system is using in three UDCs. Most of the SPs express that electricity supply is sufficient as per their need. But in Raipur many SRs told electricity is not regular here. Solar system is not used due to accommodation problem in the center. SP of the center mentions that the problem will be solved quickly because the center will be shifted at newly made union parishad building.

5.5.5: Speed of Internet: Affording internet connectivity is still costly in the country. Many villagers have no idea about speed of internet. It is already mentioned that modem is usually used for internet connection at the center. So internet connectivity facility is bought by the SP's of their own fund. In this regard, the SRs are requested to give their opinion about the question "In what extent UDC has enough speed of internet for online services?" Here 'Not Good' represents 'Very Poor' and 'Poor' both and 'Good' represents 'Good' and 'Very Good' both.

Since the SRs are common people of the country and 16% of them are not literate a significant number of SRs expressed that they have no idea about speed of internet of UDC. But sometimes they do not get the service timely due to slow speed of internet as per the service provider's opinion.



Graph 5.10: SR's opinion about speed of internet

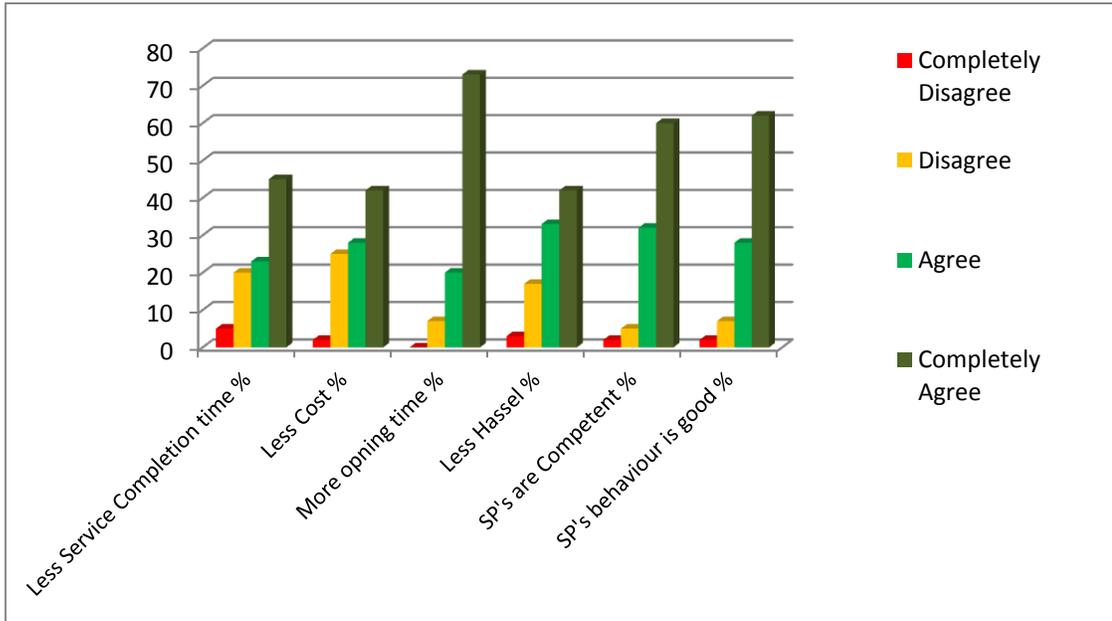
The table shows that 55% SRs consider speed of internet at UDC is poor. And 18% SRs have no idea about the internet speed at UDC. Only 27% SRs express the internet speed is good. Most of the SPs also consider speed of internet is the main problem of smooth delivery of service. Among five SPs only one SP from Bondobila think speed of internet is moderately good. But others consider speed is the main problem at the center.

5.6: Factors Causing Satisfaction: Service Receiver's Expectancy

Service receiver's expectancy has been derived under six indicators less service delivery time, less cost, more service hour, hassle free, service providers' competency and behavior. Here SR's opinions regarding provided services and service providers have been taken by comparing with prior days when UDC was not established in UP complex. The govt. services like BRC that are providing by UDC at present were used to provide by UP authority before. So, SRs can compare between the two situations easily. The SRs who have no practical experiences about previous days they also have given their opinion by the common concept of their family experiences. The SRs are requested to give their opinion regarding the statements "Service completion time is less compare to previous days", "UDC save cost compare to previous days", "Service of UDC is hassle free compare to previous days", "UDC is opened all time as per necessary", "UDC service providers are competent enough to deliver the service promptly" and "Behaviour of UDC service providers are good". The SRs express their level of agreement about statement given related to their

expectation under ranks Completely Disagree, Disagree, Agree, Completely Agree and Do not Know.

Out of 60 SRs most of the receivers are either agree or completely agree with given statement. The table given below expresses the level of agreement of SRs at a glance:



Graph 5.11: SR's opinion about their expectancy regarding UDC services

The graph shows Very few SRs are completely disagree with less service completion time, less service cost, more service providing time and less hazardous compare to days without UDC. Most of the SP's educational qualifications are HSC level. But they are doing their job in ICT based UDC efficiently. Because they able to satisfy the SRs with their competency. In this manner only 5% SRs are disagree with SP's competency. Most of the SRs (90%) agree with good behavior of UDC service providers.

5.7: Factors Causing Satisfaction: Service Provider's Expectancy

In-depth interview has been taken for getting qualitative data for SP's expectancy. There are four indicators (Service Process Easiness, Income, Social Respect and Authority Attitude) are used for getting satisfaction level of SPs. From educational background it is found that most of the SPs have 10 to 12 years education. Since the center is ICT based they should have some computer skills also. In this regard how much easy the SPs feel with the work

process at UDC has been asked by the researcher. The SPs think Service Process is very easy to them and they enjoy their work also. They do not feel any difficulty for completion of service through internet except low speed of internet.

Most of the SPs are satisfied about their earnings. The SPs informed that these earnings are not only by government services. But a significant part of their earnings come from government services. One SP from Ghatail is moderately satisfied. Among five SPs only one female SP is dissatisfied about her earnings. In Deulabari, usually commercial services are not provided now and they served mainly birth registration certificate. So their monthly income is not very satisfactory. If they extend their service, then they may earn more. In this sequence, they are asked the question ‘Why they are not extending their service?’ They replied casually. That means they are not serious with the issue. So, SP’s competency as well as willingness is responsible to increase the earnings. From the interview of SP’s and specialists of UDC it is found that the SPs who are providing other commercial services also competently, their earnings are much better than who are providing only government services. But the main benefit of providing government Services from UDC is honorable position in the society.

All the SPs think work in UDC is respectable enough in the society. The SPs whose monthly income is not satisfactory enough they are asked “why are you not leaving the center?” They replied “Though income is not very satisfactory but our relatives, neighbors even villagers respect my work. That is one of the reasons I am not thinking about leaving the center.” From the observation it is told that all SPs are very much satisfied in the issue of social recognition.

Most of the SPs are satisfied with authority attitude. In two places chairman of UPs are not very much cooperative. But the SPs express that other authority like UNO, ADC, BCC are cooperative enough. They think support from the government is very much helpful to establish the infrastructure of ICT facility but they enjoy their Independent working environment especially. Analyzing all the indicators it is found that most of the SPs are satisfied enough about their entrepreneurship at UDC.

5.8: Critical analysis on the satisfaction of UDC Users linked factors:

5.8.1: Demographic Factors and SR's satisfaction relationship: Five indicators Gender, Religion, Age, Education and Occupation are considered for Demographic factors. How satisfaction is affected by Gender can be explained by the table below presented.

Table 5.9: Gender of the SRs and Satisfaction at UDC: Cross tabulation (n=60)				
		Satisfaction at UDC		Total
		Dissatisfied	Satisfied	
Gender of the SRs	Male	23%	77%	100%
	Female	14%	86%	100%

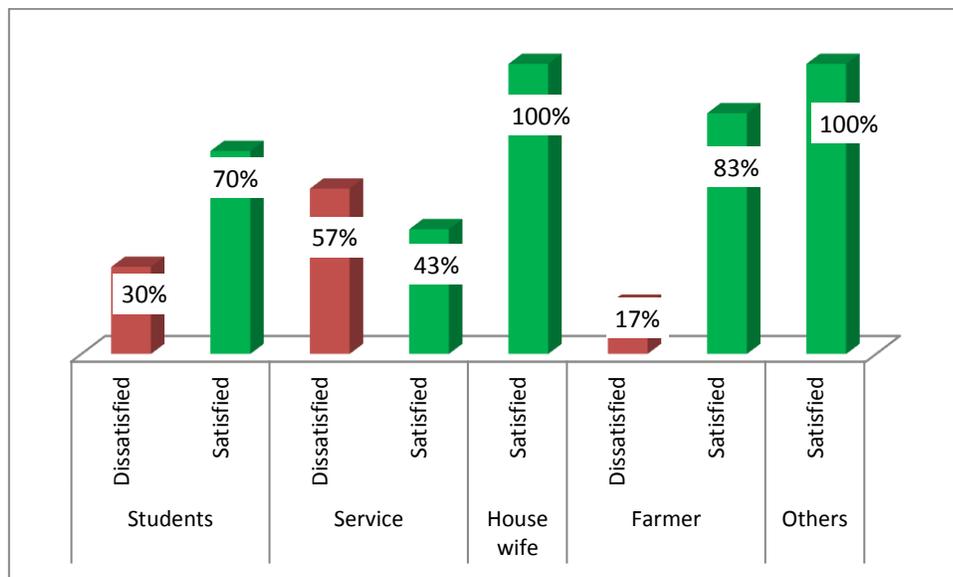
The table shows female are more satisfied than male. Here from the education of SRs it is found that only 12% respondents are higher than secondary level of education and all female are within higher secondary level. So, female SRs are less educated than male SRs. In the same from occupational status about 50% women are house wives who have usually less idea about ICT facility. So, it is evident that female have less experiences than male about ICT based online services. As a result they can compare less among ICT based services provided by other outlets and feel more satisfaction.

Table. 5.10: Age of SRs and Satisfaction at UDC: Cross tabulation (n=60)				
		Satisfaction at UDC		Total
		Dissatisfied	Satisfied	
Age of SRs	Younger people (15-35)	28%	72%	100%
	36 and above	5%	95%	100%

The table shows that older SRs are more satisfied than younger SRs significantly. Only 5% SRs whose age are from more than 35 years are dissatisfied about UDC. Whereas 28% SRs whose age are below 36 years dissatisfied about UDC. Again, correlation value of age of SRs is .265 which is significant at 0.05 level. So age is also an important factor for

satisfaction of SRs among the indicators of demographic factors. From the age of the respondents it is found that most of the SRs are from young age. One SR is found who about 103 years old is. He is very much satisfied about UDC services. Because he can compare the service with previous days and thinks getting service is very easy now compare to previous days.

Again for occupational status correlation value is 0.342 where significant at 0.01 level. So it is seen that occupational status is also significant for satisfaction in using UDC.



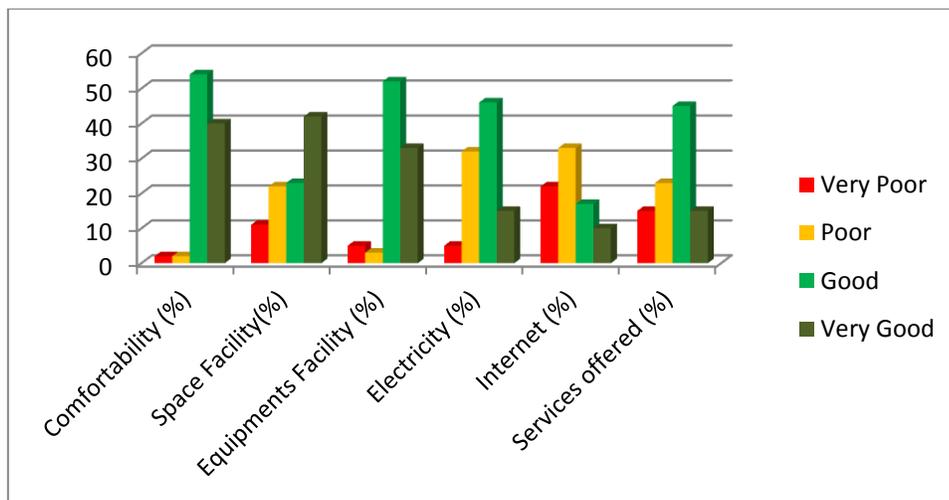
Graph 5.12 Occupation wise Satisfaction of SRs

The graph shows that 57% service SRs are dissatisfied with UDC. One of that main reason behind it that service people have more experiences about on line services. Again services people are usually have time limitations compare to students and farmers. So, they are also more conscious about time and expect quick service. On the other hand from service hour of UDC it is found that the center is opened all time as per demand of SRs usually. So housewives can come at the center after completion their housework and stay at the center with relax. So, they do not feel discomfort in case of delay of completion of desired work and feeling satisfied with the services.

In the study it is seen students are mainly from higher secondary level. So they have not enough experiences about ICT facility and get less opportunity for comparison. As a result, it is found 70% students are satisfied about UDC.

5.8.2 Supportive factors and SR’s Satisfaction relationship:

It is observed that among 60 SRs most of the SRs give their opinion either very poor or poor in case of internet speed only. Most of the SRs express their comment either good or very good in favor of comfortability in using UDC and Equipment facility. For space availability for using SRs and uninterrupted electricity supply, they express their opinion in mixed way that is poor or good. As per researcher observations, among 4 centers space condition of two centers (Raipur and Deopara) is good and condition of other two centers (Deulabari and Bondobila) is not good enough. For uninterrupted supply of electricity, using solar system resulted good condition. For Raipur center, solar system is not used due to incomplete situation of UP building. People of this center express electricity as a main problem in the center but all SRs of the center think center is effective. It shows that other factors affect the effectiveness also. Comparison table among six indicators of supportive factors may clarify more.



Graph 5.13: SR’s opinion about indicators of supportive factors at UDC

From the graph, it is compared among SR’s opinion about 6 indicators of supportive factors. The table at a glance shows that SRs express their opinion as very poor and poor condition of internet speed. More than half (55%) of the SRs think internet speed is not good. Again

37% SRs think negative condition of electricity supply also. From the survey it is found that all UDC have solar system for continuous supply of electricity but in Raipur UDC solar system is not using due to accommodation problem. They informed that they will soon solve the problem. So SRs of this center express negative feelings about electricity which may carry relatively negative (37%) position compare to other indicators. It is also clear that SR's are very much positive about comfortability and equipment facility and very much negative about speed of internet. The first objective of UDC is 'ensure easy access of common people to ICT facility' for which comfortability is an important factor of SR's easy access in the center. If comfortability of UDC is analysed by gender basis it has been found that:

Table 5.11: Gender of SRs and Comfortability at UDC: Cross tabulation (n=60)				
		Comfortability		Total
		Poor	Good	
Gender of the SRs	Male	5%	95%	100%
	Female	0%	100%	100%

Out of 35% women SRs there is nobody who is not comfortable at UDC that is every female expresses that they are comfortable at UDC environment. UDC is usually situated at UP building. Common people believe the office as their own that is why they feel easy to take services from the UDC.

Again from the occupation of SR's it is seen that 16% female are housewives, 10% are farmers and from the educational background of SRs it is found that 16% SRs are illiterate. So, if these services are provided by the government offices in upazila or district level like UNO office or DC office they may not feel so easy. In most cases they may take help from 'dalal' to receive the service. So, comfortable environment of UDC is able primarily in easy access of common people in the government services through online that is ICT facility. This may be the first step of achieving first objective of UDC.

From the graph 5.13 comparisons among six indicators of supportive factors has been showed at a glance. Now it should be analysed in what level these factors affect the satisfaction of UDC SRs. Correlation between the indicator of supportive factors and SR's satisfaction is explained first in this manner.

Table.5.12: Supportive factors and Satisfaction of SR's relationship (n=60)

Indicators of Supportive Factors	Correlation value
Satisfaction about Service Number	0.655**
Comfortability Condition	0.507**
Space Facility	0.505**
Equipment Facility	0.501**
Internet Speed	0.413**
Uninterrupted Electricity Supply	0.257*

**-Correlation is significant at the 0.01 level (2-tailed), *-Correlation is significant at the 0.05 level (2-tailed)

The table shows that correlation value of satisfaction about service number regarding SR's satisfaction is the highest among the indicators of supportive condition. It has been seen from the cross tabulation that there is no dissatisfied SR who thinks expected number of government service is high. Because, young people who the main users of UDC have general idea about online services. Especially the newspaper, television media helps to make knowledge about online practices in other developing counties. So, the young SRs believe GoB should more cordial to increase the number of online services.

Again correlation value of 3 indicators: Comfortability, Space availability and Equipments facility are significant in same level. Compare to those indicators regularity of electricity and speed of internet are less significant (level of significance at 0.05 instead of 0.01). Correlation value for electricity and internet are also smaller than that of other indicators. Electricity and high cost of internet are problems of macro level in the country. Common

people are aware about lack of electricity problem. They feel that this is a problem across the country. Using solar system the UDCs are trying to fill the lack of electricity. Still there have some sort of problem of continuous supply but it does not create much dissatisfaction among users. That is one of the main reason behind of less significance of supply of electricity compare to other 3 indicator mentioned above. It is also seen that the three indicators: Comfortability, Space availability and Equipments facility are more significant than internet speed.

The table may explain more:

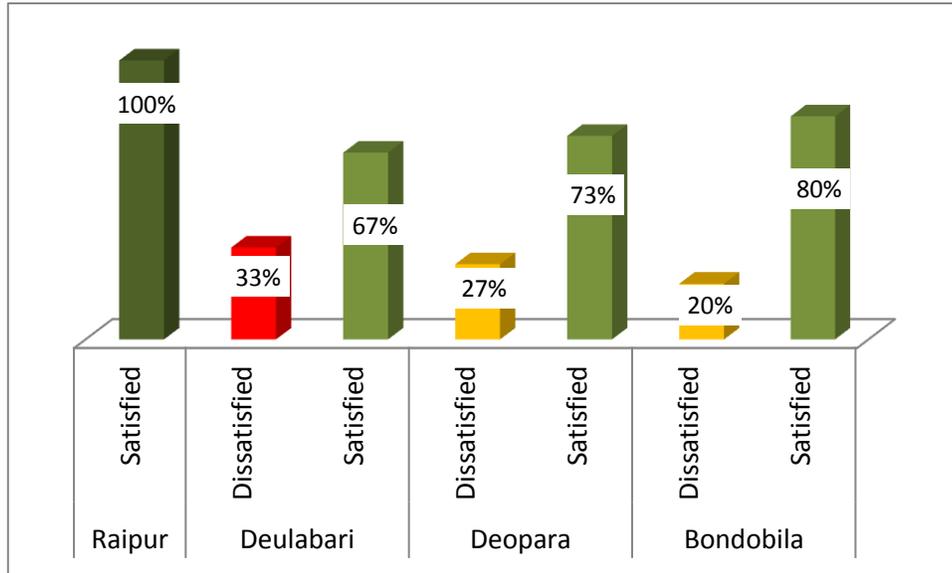
Table 5.13:Internet speed and SR's Satisfaction: Cross tabulation (n=60)				
		SR's Satisfaction		Total
		Dissatisfied	Satisfied	
Internet speed	Poor	30%	70%	100%
	Good	0%	100%	100%

From the table it is found that SRs who express their opinion about speed of internet is good they are not dissatisfied about UDC. In other words, who think internet speed is good they think UDC is effective. It is seen that most of the SRs (70%) who think speed of internet is poor but they are satisfied about UDC. It implies that speed of internet as well as other factors play important role on effectiveness like available space, service number and so on.

Bangladesh is not well developed country. Internet facility is still costly for common people. E-service through UDC is very much desired issue to the common people and they believe some sort of problem like slow speed of internet is better than service without electronic media that is manual services provided earlier. So, slow speed of internet does not create dissatisfaction very much. They are ready to accept the delay due to poor speed of internet. This may point out that the three indicators: Comfortability, Space availability and Equipments facility are more significant than internet speed for creating effectiveness of UDC as per SR's opinion. But as per opinion of SP's slow speed of internet is the main

problem of delivering prompt service. As a result it creates dissatisfaction among Service Providers very much rather than Service Receivers.

If Satisfaction level as per UDC is analysed carefully it can explain the issue more:



Graph 5.14: SR's satisfaction about UDC as Union wise

The graph shows satisfaction level for all UDC are high but there have some differences between the satisfaction level among the four UDCs. The graph also shows that 33% SRs are dissatisfied at Deulabari UDC which is the highest among four UDC. It has already discussed that in Deulabari union there have some space problem. 60% SRs think space is not enough at the Deulabari center. Again the center is providing BCR mainly. So, common people are not getting diverse services. But high service number is important issue for creating satisfaction among SRs which has been found from the study. As a result a significant number of (33%) may be dissatisfied about UDC.

It is found that all the SRs (100%) of Raipur UDC is satisfied. UP chairman of this center is very much proactive about UDC services. He is also serving as the chairman of Raipur UP for last 12 years. So, positive attitude of UP chairman and competent service of SP's may affect the opinion of SR's. SRs of these centers are very much positive. The researcher

observes that there have some problems like lack of electricity supply, low internet speed and shortage of manpower. There has no female SP. Only one male SP is delivering the services. Though he is to be very busy to serve the people but the people feel it affectionately. They take the problems of UDC as their own problem and hopeful that it will be solved quickly by the effort of SP and Chairman of UP.

5.8.3 SR's Expectancy and Satisfaction relationship:

From the earlier discussion it is seen that the SR's are very much positive about their expectancy at UDC services. How much these indicators are affecting the satisfaction of SRs can be expressed by the table more:

Table 5.14: SR's expectancy and Satisfaction of SR's relationship

Indicators of SR's expectancy	Correlation value
Less Cost	0.725**
Less Service Completion Time	0.706**
SP's Behaviour	0.671**
Hassel Free Service	0.581**
SP's Competency	0.582**
More service hour	0.559**

** - Correlation is significant at the 0.01 level (2-tailed)

The table exposed all the six indicators have strong relationship with the satisfaction of SRs. But service cost is the most significant indicator among the six indicators. Service completion time and behavior of SP's are also more significant compare to other indicators like competency of SPs, opening hour and hazourd of service. From the satisfaction level of SR's it is found that 80% SRs are satisfied about UDC services. It is inferred that very high status of SR's expectancy may be positively affecting the satisfaction of UDC SRs. For some indicators of supportive factors like electricity and internet, SRs are not very much positive but these factors affect their satisfaction less. They know that a huge financial support is needed for satisfactory supportive condition which is not possible quickly for the

developing country like Bangladesh. As a result, the SRs satisfaction about the existing quality of services (cost, time, hassel free) and SP (competency and Behaviour) are better than the satisfaction about the condition of supportive factors (infrastructure) of UDC.

5.8.4 SP's expectancy and satisfaction relationship:

From the in depth interview it is found that the SPs are very much dissatisfied about speed of internet especially for online birth registration. Low speed of internet takes more time for delivery of service and wastes their time. If they change their existing modem or other package based internet facility it increases their operation cost. So, they demand low cost of internet for quick online services.

Again, UDC is formed under PPPP modality which is new concept in the country that is practiced at root level service delivery. Service providers of UDC are entrepreneurs. In society, usually government employees get respect from the villagers. Since UDC is an initiative of A2I projects and GOB the UDC service providers are getting the scope for maintaining close relationship with the government employees and policy makers. UDC is also situated in UP complex and room of UP building is used for the service. In practical, SPs get the respect from the society as government employee which increase their prestige in the family as well as society.

It is observed that easy service process, working in an independent environment and getting respect as government employee gives the SPs an extra satisfaction. As a result they are enjoying the work very much. In some places monthly income is not as their expectation but they are satisfied at UDC considering the other factors like social recognition. Eventually, it is told that SPs of UDC are satisfied about the job and they consider UDC is effective.

5.9: Effectiveness of UDC:

Effectiveness of UDC has been found through satisfaction of two kinds of users of UDC: service receivers and service providers. Service receiver's satisfaction has been affected by three independent variables demographic factors, supportive condition of UDC and SR's expectancy. For demographic factors it is found that common people are using the UDC which is dominated by young aged (40% is below 25 years) people and 38% SRs are students also. For demographic factors it is also revealed that young aged, male, literate, and service holders SRs are less satisfied than older, female, illiterate, other occupation SRs. For supportive factors most of the SRs consider supportive factors of UDC are good except speed of internet. But it is found that speed of internet does not affect SR's satisfaction very much regarding services at present. Again for SR's expectancy, for every indicator it is found that at least 68% SRs agree with positive expectation about UDC. Moreover from SR's opinion it is found that 80% service receivers are satisfied about UDC.

On the other hand, SP's satisfaction is derived through in depth interview. Service provider's satisfaction has been affected by two independent variables supportive factors of UDC and SP's expectancy. For supportive factors it is found that most of the SPs consider speed of internet is not well at all. But SPs are very much positive about their expectancy (service process, earnings, social honour and authority attitude). UDC is established under pppp modality. So, SRs can work independently compare to government employee. As a result UDC is opened more. The main advantage of the modality is: UDC is getting infrastructural support like government structure. Analyzing the entire interview it is found that most of the SPs are satisfied enough about their entrepreneurship at UDC.

So, from the above discussion it is found that both the users (Service Receivers and Service Providers) of UDC are mostly satisfied.

Again most of the SPs are under age of 25 years. They are very much hopeful about the initiatives of UDC and expect the present problems will be overcome very soon. This positive attitude helps to create the satisfaction of UDC Service Providers as well as other

factors like social honour, service process easiness, authority behavior and earnings as discussed in the paper.

From the different types of services it is observed that there have small numbers of online government services are provided now. But SRs are very much positive about the delivered services. Usually the country had no ICT based infrastructure in root level. And creating ICT based infrastructure in root level governance was very much ambitious issue for the GoB. But to keep pace with common people's aspiration, with the help of A2I programme, the basic ICT infrastructure has been made at UDC. The common people understand it has been possible due to cordiality of the GoB. Though there have some problems in providing govt. services but that will be decreased gradually. So, SRs get some services as per their expectation. They feel happy in the thought that present government services provided by UDC are better than services provided by UP compare to previous days without using ICT. That is why most of the SRs (80%) are satisfied at UDC.

In conclusion it is told that UDC is mostly effective in providing Government services.

Chapter 5

Conclusion and Recommendations

The utilization of ICT creates opportunities in communication between individuals and improves personal and socio-economic status. ICT is rapidly changing the ways of living and interacting with society and institutions of a country while at the same time it is causing people to divide into information-rich and information-poor. Information-poor group is disadvantaged in obtaining and exploiting information due to lack of income, literacy, and access to ICT. Such deprivation of the information-poor group is creating information gap wider. (Mahiuddin & Hoque 2013). On considering the situation A2I projects and GoB took initiatives at aiming less the information gap between rich and poor. In other words, GoB tries to bring the whole population under the same umbrella of ICT facility through UDC.

In the analytical framework it is expressed that effectiveness of UDC affects by four independent variables: Demographic factors, Supportive factors, SR's and SP's expectancy. Data for service providers has been collected through in-depth interview. From the interview it is found that service provider's (SP) satisfaction is affected by supportive factors and their expectancy. Though earnings from government services are not satisfactory for all cases but social recognition due to government service causes satisfaction for SPs. Data obtained for SRs about three variables: Demographic factors, Supportive factors, SR's expectancy has been collected by quantitative analysis. From the collected data it is clear that effectiveness of UDC that is satisfaction of users of UDC is affected mostly on those variables used in the analytical framework of the study.

For demographic factors it is found that younger people (15 to 35 years) are less satisfied than relatively older (36 and above) people. So, satisfaction varies by age also. In the same way it can be explained that satisfaction varies by gender as well as occupation. Because from the study, it is seen that female are more satisfied than male. Service holders are more dissatisfied than other occupation people. Satisfaction also varies by literacy. So, it is revealed from the analysis that the indicators used in analytical framework have significant relationship with satisfaction but some indicators: status of government service, service

completion time, cost of service and behavior of service provider are more significant than others.

Moreover, regression analysis was done on the response of SR's satisfaction about two independent variables: supportive factors and service receiver's expectancy. For SR's satisfaction, regression analysis was found as $R^2=.768$ where two indicators service delivery time and uninterrupted electricity have been found significant at .008 and .053 level.

The study aims two objectives: finding out present status of government service provided by UDC and level of effectiveness of UDC in providing those services. Effectiveness has been derived through user's satisfaction in receiving government services at UDC.

For the first objective 'present status of government service provided by UDC' has been derived through the indicators of SR's satisfaction regarding expected number of government services provided by UDC.

For the second objective 'assessing the level of effectiveness of UDC' has been derived through the satisfaction of service receivers and service providers at UDC. SR's satisfaction has been affected by three variables: demographic factors, supportive factors and SR's expectancy. For the study five indicators gender, religion, age, education and occupation of SRs have been considered for one of the independent variables: Demographic factors of SR's. From the data of demographic factors of SRs, it is observed that different kinds of people: male and female, Muslim and Hindu, young and old, literate and illiterate, student and service people, farmer and housewife are taking services from the UDC. So, from the analytical point of view it is clear that common people are the SRs of UDC. Now the question is whether these common people have easy access at UDC or not. In what extent they are satisfied in getting services from UDC?

To find out the supportive factors of UDC six indicators: comfortability, space facility, equipment facility, uninterrupted electricity, speed of internet and service offered have been considered in the study. How friendly the atmosphere of UDC is derived through indicator

of SR's Comfortability and available space in UDC for using SRs. In both indicators it has been found that 94% SRs are comfortable and 66% SRs think space is available at UDC. The SRs expressed their opinion in favor of well condition for other indicator also.

Again service time, cost, hassel free, opening time, competency and behavior of SP have been derived under the independent variable SR's Expectancy. For all the indicators it is found that most of the SRs are agree with positive change of government services at UDC. SPs are also satisfied mostly about infrastructure and their expectancy regarding UDC. So, from two kinds of user's: SR's and SP's perspective it is found that they are satisfied mostly. In conclusion, it is told that both the users of UDC are mostly satisfied and UDC is effective.

As per in depth interview of UDC specialist and related authority it is found that common people are very much positive about UDC services. Within many limitations the government is trying to ensure the ICT facility to common people and the Government is successful to make ICT infrastructure at rural level. Now increasing number of government service and low cost of internet can ensure the ICT services mostly. So, speed of internet and status of government service are the main challenges for UDC being fully effective. On the other hand service receiving time, cost of service and behavior of service provider are very much important factor for UDC being effective. It is also observed that service process easiness and social respect of service providers are also very much important for SP's satisfaction and UDC being effective.

In the study two research questions were set relating level of effectiveness of UDC and affecting factors of effectiveness in providing government services. The answer of first question is UDC is mostly effective in providing government services but not fully effective. And the factors that affect the effectiveness more are: Speed of Internet, number of government services, service delivery time, cost of service, behavior of service providers and social recognition of entrepreneurs.

Recommendations:

There was one question for SRs in questionnaire related with increase the effectiveness of the center. In Bondobila union most of the SRs suggested regarding new space or new building can improve the situation most. In Deulabari union the SRs suggested that increase the number of service, competency of SPs and well space management can improve the situation. But from the interview of the SPs and UDC specialists it is found that low cost of internet and more online government services are the most important factors for UDC being more effective. As the study it is observed that, the UDC may more effective by the following things:

Increase status of government service: Though UDC is formed in the aim of providing ICT based services especially online services. But number of online government services in the country is still very low. If land certified copy (porcha) and psssport receiving systems are delivered smoothly by online mostly then the common villagers will use the ICT based center most. So increase the online government service is crucial for effectiveness of UDC.

High Speed of Internet: As per comment of UDC SPs, slow speed of internet is the main problem for quick delivery of service. Low cost of internet can solve the problem easily. The other problem is Birth Registration Certificate is the most provided service at UDC. But the SPs commented that online entry of the certificate create severe problem due to very slow speed of internet. They also commented that main server of the country is not developed as the necessity that is the reason for very slow speed. So, server system should be developed.

Birth Registration Certificate correction process simplification: At present the ultimate power of BRC correction is delegated in the ministry level and the process is not supported by online. So, people are to come to Dhaka physically to do correction. The SPs commented that in initial stage of UDC there have some problems of BRC which need to be corrected immediately. In many cases the mistakes were made by SP's incompetency and lack of understanding. But the correction process is so complex at present that they are not getting the scope to be corrected of those mistakes. It is creating severe problems for common

people ultimately who are not responsible of those mistakes. So, for those cases process should be simple by verifying the real ground of necessity.

Better space management for SRs: In Bondobila Union 53% SRs and Deulabari union 60% SRs think that space for their using is not available. In Bondobila, building is very old and in Deulabari no sitting arrangement for SRs. But space has a good relationship in effectiveness. The correlation value between the two is 0.505 where the value is significant at 0.01. So, better space management may take more effectiveness of UDC.

More competent SP: The study found that as per SR's opinion SPs are competent enough to deliver the service. But specialist of UDC and observation among the five SPs from four UDC it is observed that more competencies of some SPs are necessary to improve the effectiveness. Related training may get good result in the case.

Female SP: The study is made under four UDC. Among those UDCs it is found that there was no female SP in two UDCs. Both of male SP of UDCs told that interested and competent female SP was not found there. In Raipur UDC it is seen that SRs have to wait long time to get the service. The main reason of delay is that there is one male SP instead of two SP: one male and other female. It is also mentionable that among the five SPs the only female SP was the most dissatisfied about the earnings. So, some mechanism like extra incentives system should be applied in the case so that competent female SP is found.

Professional contact between UP chairman and SP: Attitude of UP chairman is an important factor for ensuring good working environment for SPs. Among the four UDCs it is found that UP chairman's attitude at one UDC is not professional to UDC. SPs feel embarrassed sometimes even in front of SRs for his negative comment regarding UDC. At present there has a formal contract which is common for all UDC in the country between UDC and chairman but it should be made in more professional and realistic way targeting situation of individual UDC.

Awareness of Villagers: Still many people have little idea about UDC. When they need BRC or other papers related to UP chairman then they come to UDC only. But most of them have no knowledge about other services provided by UDC. Finally it is told that increasing awareness among villagers is necessary to improve the effectiveness of UDC.

Public service delivery is a great concern for the government of Bangladesh at present. Because better service for common people compare to previous days can create confidence to the Government. E-service is much ambitious issue for the developing country like Bangladesh due to cost effectiveness mainly. It is already mentioned that the country is manifested various problems like insufficient energy, low computer literacy, complex bureaucracy and so on. Common people of the country are conscious about those problems. They know that change in hundreds years old public service delivery procedure is not easy but possible if the government is proactive enough. Common villagers consider establishing UDC is one of the dynamic initiatives taken by the GoB. There have some common problems like low number of government services, Low internet speed in UDC service but the SRs take these problems with their own judgment of positive manner. As a result they are very much pleased with the services of UDC delivered at present and hope the change has been started in public service area through UDC and most of the users are satisfied with the government services as it is observed in the research. In the summery, it is told that very much positive mindset to ICT services of common UDC users is mainly responsible for creating high satisfaction about government services and effectiveness of UDC.

Further Research:

From the in depth interview of SP it is known that common people have a huge demand of some government services like passport and land related services. But these services are partially online services. They can apply for receiving the service through online but ultimate delivering process is made by manually. In this manner, if the common villagers apply for those services through UDC it creates extra hazard for them. Ensuring these two services delivery from the UDC may bring the people very close to the center. From the study it is found that status of government service has the strongest relationship with satisfaction of UDC SRs. And status of government service may be increased by increasing

the number of online service. From the data collected for supportive factors of UDC it is also observed that ICT based online service supported infrastructure has been made in rural area. So, to increase the number of online government services at UDC, identifying the reality of linkage between UDC and respective service delivery counter may be the further research area.

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Appendix A: Questionnaire for Users in Bangla:

সেবা গ্রহণকারীদের জন্য প্রশ্নাবলী

পাবলিক পলিসি এন্ড গভর্ন্যান্স (পিপিজি) প্রোগ্রাম
ডিপার্টমেন্ট অফ পলিটিক্যাল সাইন্স এন্ড সোসিওলজি
নর্থ সাইথ ইউনিভার্সিটি, ঢাকা, বাংলাদেশ
ইউনিয়ন ডিজিটাল সেন্টার এর কার্যকারিতা সার্ভে

সিরিয়াল নম্বর :

তারিখ :

জেলা :

থানা :

ইউনিয়ন :

১। নাম (ঐচ্ছিক) :

২। লিঙ্গ : ১. পুরুষ

২. মহিলা

৩। বয়স :.....বৎসর

৪। ধর্ম:.....

৫। শিক্ষাগত যোগ্যতা (সর্বশেষ অর্জিত ডিগ্রী) ।

(ক) নিরক্ষর

(খ) অক্ষর জ্ঞান সম্পন্ন

(গ) প্রাথমিক পর্যায়

(ঘ) নিম্ন মাধ্যমিক পাশ

(ঙ) মাধ্যমিক পাশ

(চ) উচ্চ মাধ্যমিক

(ছ) স্নাতক ডিগ্রী প্রাপ্ত

(জ) স্নাতকোত্তর অথবা তদূর্ধ্ব

৬। পেশা :

৭। বাসস্থান থেকে ইউনিয়ন সেবা কেন্দ্রের দূরত্ব :.....কিঃমিঃ

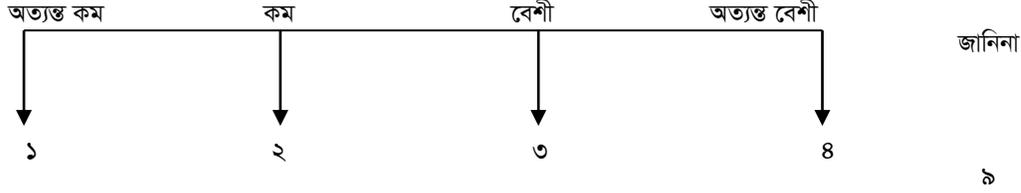
৮। আপনি ইউডিসি হতে কি কি সেবা নিয়েছেন ?

৯। আপনি এ পর্যন্ত কতবার সেবা নিয়েছেন ?

১০। নিম্নোক্ত বিষয়ে আপনার মতামত দিন :

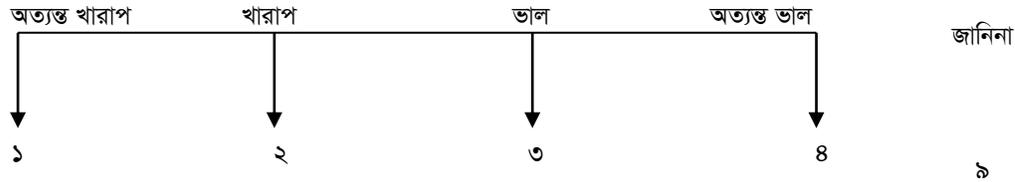
অবকাঠামোগত সুবিধা	খুবই খারাপ ১	খারাপ ২	ভাল ৩	খুবই ভাল ৪	জানিনা ৯
(ক) ইউডিসি হতে সেবা গ্রহণ আপনার কাছে কতখানি সুবিধাজনক মনে হয়?					
(খ) আপনার বসার/অপেক্ষার জন্য যথেষ্ট জায়গা আছে কিনা ?					
(গ) সেবা নেওয়ার সময় বিদ্যুৎ সরবরাহ কতটা নিয়মিত?					
(ঘ) অনলাইন সেবা গ্রহণের ক্ষেত্রে ইন্টারনেট স্পীড/গতি যথেষ্ট কি না?					
(ঙ) অনলাইন সেবা নেওয়ার জন্য ইউডিসিতে কম্পিউটারসহ প্রয়োজনীয় সরঞ্জামাদী কতখানি আছে?					

১১. আপনার প্রত্যাশা অনুযায়ী সরকারী সেবা সমূহ ইউডিসি হতে কতটা পাওয়া যায়?



উপরোক্ত উত্তরের স্বপক্ষে কোন মন্তব্য থাকলে দয়া করে বলুন ।

১২. বর্তমানে যে সকল সরকারী সেবা সমূহ ইউডিসি হতে দেয়া হচ্ছে সেগুলোর বিষয়ে আপনার মতামত কি?



উপরোক্ত উত্তরের স্বপক্ষে কোন মন্তব্য থাকলে দয়া করে বলুন ।

১৪। নিম্নের বর্ণনার বিষয়ে আপনার মতামত কি?

সেবা প্রার্থীর প্রত্যাশা	সম্পূর্ণ দ্বিমত ১	কিছুটা দ্বিমত ২	কিছুটা একমত ৩	সম্পূর্ণ একমত ৪	জানিনা ৯
(ক) ইউডিসি প্রতিষ্ঠার পর বিগত দিনের তুলনায় সরকারী সেবা পেতে কম সময় লাগে।					
(খ) ইউডিসি প্রতিষ্ঠার পর বিগত দিনের তুলনায় সরকারী সেবা পেতে কম খরচ লাগে।					
(গ) ইউডিসি প্রতিষ্ঠার পর বিগত দিনের তুলনায় সরকারী সেবা কম ঝামেলা যুক্ত।					
(ঘ) প্রয়োজন অনুসারে ইউডিসি সবসময় খোলা পাওয়া যায়।					
(ঙ) ইউডিসি সেবা প্রদানকারীরা সেবা প্রদানে যথেষ্ট দক্ষ।					
(চ) ইউডিসি সেবা প্রদানকারীর আচার ব্যবহার ভাল					

১৫। ইউডিসি সেবা গ্রহণের ক্ষেত্রে প্রধান সমস্যা কি বলে আপনি মনে করেন?

১৬। ইউডিসি হতে সেবা গ্রহণ করে আপনি কতখানি সন্তুষ্ট?



জানিনা

৯

উপরোক্ত উত্তরের স্বপক্ষে কোন মন্তব্য থাকলে দয়া করে বলুন।

১৮। ইউডিসি কে আরো বেশী কার্যকর করার জন্য আপনার যদি কোন সুপারিশ বা পরামর্শ থাকে তবে দয়া করে বলুন।

সেবা প্রদানকারীদের জন্য প্রশ্নাবলী:

পাবলিক পলিসি এন্ড গভর্ন্যান্স (পিপিজি) প্রোগ্রাম
ডিপার্টমেন্ট অফ পলিটিক্যাল সাইন্স এন্ড সোসিওলজি
নর্থ সাইথ ইউনিভার্সিটি, ঢাকা, বাংলাদেশ
ইউনিয়ন ডিজিটাল সেন্টার এর কার্যকারিতা সার্ভে

সিরিয়াল নম্বর :

তারিখ :

জেলা :

থানা :

ইউনিয়ন :

১। নাম (ত্রিচ্ছক) :

২। লিঙ্গ : ১. পুরুষ

২. মহিলা

৩। বয়স :.....বৎসর

৪। শিক্ষাগত যোগ্যতা (সর্বশেষ অর্জিত ডিগ্রী) :

৫। ঠিকানা :

প্রশ্নাবলী :

১। ইউডিসি হতে বর্তমানে কি কি সরকারী সেবা দেওয়া হচ্ছে ?

২। ইউডিসি তে ব্যবহৃত সরঞ্জামাদি কে সরবরাহ করেছেন ?

৩। সেবা সংশ্লিষ্ট সরঞ্জামাদি রাখার মত যথেষ্ট স্থান ইউডিসিতে আছে ?

৪। সেবা প্রার্থীদের ব্যবহারের জন্য যথেষ্ট স্থান সংকুলন হয় কি?

৫। ইউডিসি তে সরবরাহকৃত বিদ্যুৎ কি যথেষ্ট? বিদ্যুৎ সরবরাহের জন্য কি ব্যবস্থা রয়েছে?

৬। ইন্টারনেট স্পীড নিয়ে আপনি কতখানি সন্তুষ্ট?

৭। ইউডিসি এর অবকাঠামো অনলাইন সেবা প্রদানে যথেষ্ট সক্ষম বলে কি আপনি মনে করেন?

৮। আপনার কাজটি সমাজে কি যথেষ্ট সম্মানজনক বলে মনে করেন?

৯। ইউডিসি এর সেবা প্রদানে ব্যবহৃত প্রযুক্তিগত পদ্ধতির সাথে আপনি কি যথেষ্ট স্বাচ্ছন্দ বোধ করেন?

১০। এখান হতে প্রাপ্ত আয় বিষয়ে আপনার মতামত কি?

১১। আপনার কাজের সংশ্লিষ্ট নিম্নোক্ত অফিসিয়ালদের নিকট হতে আপনি কতখানি সহযোগিতা পেয়ে থাকেন?

ইউপি চেয়ারম্যান/মেম্বার-

ইউএনও-

এডিসি

বিসিসি

অন্যান্য

১২। আপনার মতে ইউডিসি এর প্রধান সমস্যাগুলো কি কি?

১৩। ইউডিসিতে বিনিয়োগ আপনি কি যথেষ্ট ভাল মনে করেন?

১৪। আপনি কি ব্যবসাটা ভবিষ্যতে চালিয়ে যাবেন ?

১৫। সার্বিক বিবেচনায় সরকারী সেবা প্রদানে ইউডিসি কি যথেষ্ট কার্যকর ?

১৬। ইউডিসি কে আরো কার্যকর করতে আপনার মতামত/পরামর্শ দিন?

Appendix B: Questionnaire for service Receivers in English

Masters in Public Policy and Governance Programme (MPPG)
North South University, Dhaka.

A Survey on Effectiveness of Union Digital Centre (UDC)
(Questionnaire for Service Receivers)

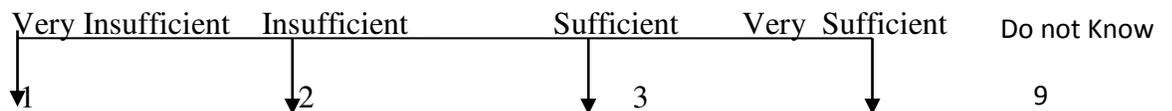
[N.B: The answers of this questionnaire will be used for academic research only.
Your sincere cooperation will extend a lot of value to the research]

1. Name of the respondent (Optional).....
2. Gender a) Female b) Male
3. Age (years):
4. Religion:.....
5. Education:
 - a. Illiterate
 - b. literate only
 - c. primary level
 - d. below secondary Level
 - e. Secondary Level
 - f. Higher Secondary Level
 - g. Bachelor Degree or higher
6. Occupation:.....
7. Distance of UDC from your house:
.....K.m.
8. What type of Service/Services do you receive from UDC?
9. How many times you have received services from UDC?
.....times

10. What is your opinion about the following statement?

Institutional Factors	Very Poor (1)	Poor (2)	Good (3)	Very Good (4)	Do not know (5)
a) How much you feel easy in taking services from UDC?					
b) In what extent UDC has spaces in favor of customer's accommodation?					
c) To what extent you think supply of electricity at UDC is sufficient?					
d) To what extent you are satisfied with the present speed of internet for service delivery?					
e) In what extent UDC infrastructure is capable for online Government Services?					

11. In what extent UDC is providing sufficient Government services as per your expectation?



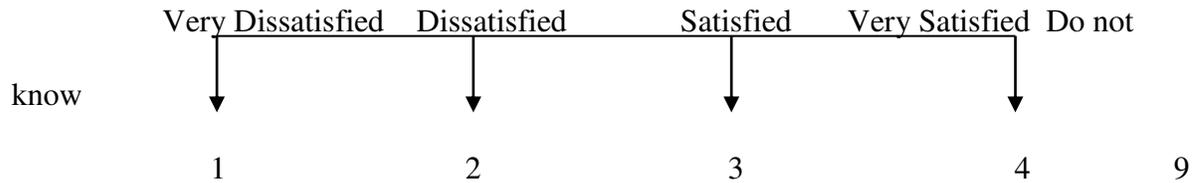
Please give your comment in favor of answers.....

12. What is your opinion about the following statement?

Service Receivers Expectancy	Completely Disagree (1)	Disagree (2)	Agree (3)	Completely Agree (4)	Do not know (5)
a) Service completion time is less compare to previous days					
b) UDC save cost compare to previous days					
c) Service of UDC is hassle free compare to previous days.					
d) UDC is opened all time as per your necessity.					
e) UDC service providers are competent enough to					

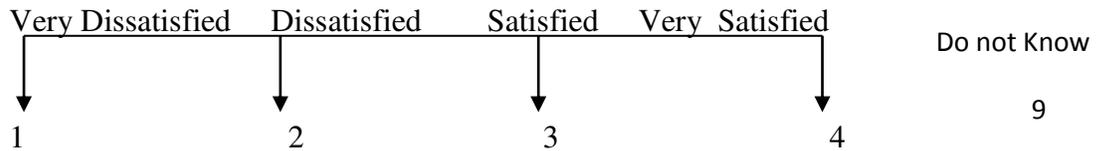
deliver prompt service.					
f) Behavior of UDC SPs is good.					

13. What is your opinion about the present status of Government Services offered by UDC?



Please give your comment (If any) in favor of answers.....

14. In what extent you are satisfied in receiving services from UDC?



15. As your opinion the main problem/s of UDC in providing Government services is:

16. Please mention your suggestion (if any) to make the UDC more effective?

Thank you very much.

Questions for service Providers:

Masters in Public Policy and Governance Programme (MPPG)
North South University, Dhaka.

A Survey on Effectiveness of Union Digital Centre
(Questions for Service Providers)

[N.B: The answers of this questionnaire will be used for academic research only.
Your
sincere cooperation will extend a lot of value to the research]

Section 1: Personal Information

1. Name of the respondent (Optional).....
2. Gender a) Female b) Male
3. Age (years):
4. Religion:.....
5. Education:
 - a. Illiterate
 - b. literate only
 - c. primary level
 - d. below secondary Level
 - e. Secondary Level
 - f. Higher Secondary Level
 - g. Bachelor Degree or higher
6. Address:.....

Section 2: Open Ended Questions

- Q1. What are the Government Services provided by UDC?

02. Do you think UDC has sufficient equipments for necessary services? Who has bought/
provided the equipments?

Q3. Does the UDC have enough space for managing equipments and dealing customers?

Q4. To what extent do you think supply of electricity at UDC is sufficient? Does the UDC have alternative source of electricity supply for delivery of service?

Q5. Do you face problems regarding speed of internet?

Q6. Do you think your neighbors respect/appreciate you for your entrepreneurship/doing work in UDC?

Q7. Do you face difficult to understand the service process? How much you enjoy working here?

Q8. Please comment about your earnings from UDC whether it is satisfactory to you or not?

Q9. How much support you get from central authority like BCC in case of technical problems and other related authority like UP chairman, UNO and ADC?

Technology Support(BCC):

UP Members:

UNO:

ADC:

Others:

Q10. As your opinion the main problems of UDC are:

Q11. Do you find UDC as a good investment? Please few comments on your Support.....

Q12. Would you like to continue the business in future?

Q13. Please give your opinion about the effectiveness of UDC in providing Government services?

Q.14. As per your opinion steps should be taken immediately to make the UDC more effective:

Q15. How much hopeful you are about sustainability of UDC? Do you think UDC will face great challenge to survive if a2i project do not support UDC in near future/after ending the project?

Thank you very much.

Questions for UDC related authority and specialist

Questions for interview of UDC Related authority

A Survey on effectiveness of Union Digital Centre in Bangladesh:

[N.B: The answers of this questionnaire will be used for academic research only. Your sincere cooperation will extend a lot of value to the research]

1. Do you think UDC is a unique initiative to serve the rural people in Bangladesh?
2. Do you think ppp(public private partnership) or pppp modality is the very effective way for survival of UDC?
3. What is your opinion about effectiveness of UDC in providing government service?
4. What are the main problems of running UDC for providing government services?
5. What do you think about sustainability of UDC? Do you think UDC will face great challenge to survive if a2i project do not support UDC in near future/after ending the project?
6. What steps should be taken to make the UDC more effective?

Thank you very much.