

E-service Delivery of Union Digital Center (UDC) in Rural Bangladesh: Challenges and Way out.

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Abstract

The Union Digital Center (UDC) is a one-stop service center in Bangladesh that aims to bring all types of government digital services and ICT facilities to the doorsteps of every citizen living in the country's rural areas (Seddiky et al., 2014). These newly established information centers are supported by the Prime Minister's Office (PMO) as part of the "Access to Information (a2i)" initiative, and the UDP and other organizations are assisting in the achievement of the objectives of "Vision 21" and "Digital Bangladesh" (Sharmin, 2020). The goal of this article is to identify the current state of UDCs and potential issues that prevent these information centers from providing essential digital equipment and services to the rural people.

Keywords: E-service; Union Digital Centers (UDC); Digital Bangladesh; Rural Community; Union Parishad.

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I. Introduction

ICT has become an important part of governmental activities at the beginning of twenty-first century (Mamun, 2018). Despite the fact, the developed world launched the ICT movement of governmental efforts, the rest of the world has begun to employ ICT in day-to-day activities (Rahman et al., 2020). ICT has become a remarkable tool for discharging governmental tasks all around the world. To deliver faster and smoother services to the public, the current government has developed UDC (union information and service center), district and upazila web portals based on ICT (Das. B, 2019). The growth and development of a country is impossible without the development of rural communities. Approximately 72 percent of Bangladesh's population lives in rural areas. With this in mind, the Bangladesh's government has begun an initiative to transform Bangladesh into the "Digital Bangladesh" by 2021, bringing administrative facilities to the rural peoples' doorsteps. Digital Bangladesh is a concept that intends to develop a system that allows public services to contact individuals instead of people travelling to seek services (Habib & Akhand, 2017). In this regard, the Bangladesh government has established the UDCs in Bangladesh's 4,554 UPs to distribute and provide government facilities to the mass people.

Union Digital Centre, which is equipped with computers and wireless Internet, provides users with a variety of eservices at a low cost. UDC serves as the country's one-stop service center, also known as a local knowledge center (Saleheen, 2015). By delivering e-Services to rural people, it has the potential to have a good influence on rural communities. The citizen has faced many challenges in realizing the benefits of UDCs and making them viable in order to meet public demand. These also decreases the gap between the government and the mass people. UDC may provide a variety of government services information for the benefit of rural people. The UDC is an influential and vigorous initiative aimed to implement the Vision-2021 (Digital Bangladesh) (Biswas & Roy, 2020).

Bangladesh's local government is organized into three tiers: rural, urban, and hill districts (Specialized Local Government System), all of which have more or less similar functions or tasks. Union Parishads are the smallest and most significant tier of Bangladesh's rural administrative and local government unit. Information can be readily, inexpensively, and swiftly transmitted to the citizens through the UDC. Honorable Prime Minister Sheikh Hasina inaugurated the UDC of Bangladesh on November 11, 2009. The Local Government Division has already established UDC in over 4509 union parishads with the support of the PM's Access to

Information (A2I) program (Mamun, 2018). With the assistance of A2I and the DC office, the Bangladesh Computer Council (BCC) appointed assistant programmer to all the DC offices and trained every entrepreneur/director of all UDCs. There are two entrepreneurs/ directors, one male and one female in every UDCs. Both A2I and BCC directors have received training and equipment such as a computer, webcam, and projector. The district administration (DC Office) oversees all operations under the direct supervision of the Additional Deputy Commissioner (General), also known as the District Focal Point. A2I has launched a blog called www.UDCbd.ning.com, which is one of Bangladesh's most famous and well-known blogs (BAKSHI, REJAUL KARIM, 2016).

The present government's election manifesto is to create the digital Bangladesh. Future generations will regard this as the "Sonar Bangla of the twenty-first century" (Alam, 2014). Millions of individuals have been influenced by this notion, which has captured their minds and motivated them in new ways. We see it as a critical engine of national growth (Saleheen, 2020). The 'Digital Bangladesh' project and its implementation will ensure that our goal of transforming Bangladesh into a middle-income nation by 2021 (Kumar & Kim, 2017). This vision, together with the efforts of innumerable innovative businesses, will increase the country forward on the path of sustainable development. ICT has been playing the vital role in bringing government services to the doorsteps in many developed and developing countries. In accordance with the Vision-2021, the delivery of quality services and access to the remote areas has been considerably improved as a result of the expanded use of ICT (Tipu et al., 2020). It also helps to bridge the digital divide. The establishment of an e-Service Center in each government office at the upazilla, Purashava, and City Corporation, as well as the construction of ICT infrastructure, is a necessary requirement for the establishment of Digital Bangladesh.

II. Rationale of the Research

Bangladesh is considered as a developing country in third world. Maximum people of Bangladesh lives in rural areas and majority of them are illiterate and underprivileged. The rural people have not got the government services and information due to the gap of communication in an effective way (Begum, 2017). With the help of UNDP, Government of Bangladesh has established the UDCs in 4554 UPs in Bangladesh in order to serve the mass people. This research will investigate how the UDCs connect the gap between the government and citizens while also promoting e-services in rural areas of Bangladesh. Furthermore, analyzing the problems of the study, discovered the activities of UDC are to create an e-government framework for the people living in rural Bangladesh (Hoque, 2015). Moreover, the government will be more conscious about e-services delivery for rural people so that they will get the proper benefit. In this scenario, the Union Digital Centre (UDC) provides a valuable service to rural residents by offering a variety of low-cost e-services.

UDC is a place where the grassroots people may access the different type of online and off-line government services. ICT will help the smoothen and easy access of government services to the mass people with the minimum cost which will ensure the good governance (Hoque & Sorwar, 2014). The fruitful deployment of UDC play the crucial role in the establishment of e-government in Bangladesh. By implementing Vision-2021 (BIGD, 2021). All the governmental services provided manually under the conventional system which is costly as well as time consuming. As a result, most of the rural people have not received timely services and are unable to access government services. In this circumstance, deploying UDC can improve the services of citizen by providing economical and smooth services.

III. Research Objectives

The prime objective of this research is to identify the Union Digital Centre's limitations in providing services and activities to rural citizens. More specifically the specific objectives of the study are following:

- To identify the current situation of Union Digital Centers (UDC);
- To find out the public satisfaction by reducing cost, transaction fee, time and through the electronic services;
- To find out the existing problems of e-services delivery.
- To make some suggestions for resolving the Union Digital Centers' current challenges (UDC).

IV. Scope of the Study

The prime objective of UDC is to connect rural people with the most convenient delivery of e-services. The study has emphasized the importance of efficient engagement between rural citizens and the government regarding citizen e-service delivery. It has also given importance's on improving the level of satisfaction among rural residents. As a result, everyone in rural areas may benefit from the e-governance. The research will focus on offering high-quality public services through the UDC in order to increase the satisfaction of rural citizens. It will demonstrate if individuals in rural regions benefit more from the UDC than they do from standard service delivery methods.

V. Research Methodology

In general, research methodology is the process of gathering data and information in order to achieve the study objectives. It is largely concerned with methods, tools, and techniques of data collection (C. R. Kothari, 2004). The tools used to collect data are often included in the description of a research technique (Aminuzzaman, 1991). The purpose of the study was to find out the effectiveness of UDC's in minimizing gap for e-service delivery between govt. and citizens. This study incorporates both of the qualitative and quantitative research approach which focuses on asking questions.

a. Research Design

To determine and qualify the relationship between dependent and independent variables, the quantitative research was apprehended. The relationship was expressed between variables using different statistical tools.

b. Selection of the Study Area

For the purpose of this study, eight UDCs under two Upazilas of Cumilla district have been selected on the basis of purposive sampling. It is worth mentioning that Cumilla is one of the pioneer district in terms of UDC's implementation and thus it is valid to choose the study areas.

c. Sources of Data and Sampling

The data was collected from both primary and secondary sources. Secondary data was collected from the existing literatures such as books, newspaper reports, previous research works, seminar papers, reports etc. For primary data a combination of qualitative and quantitative approach applied to achieve the objectives of this study. Data were collected through the Content Analysis, Interview (Face-to-Face Interview) method and Questionnaire Survey.

d. Sample Size

A total 100 (One hundred) respondents have been selected from the eight strata. The composition of the respondents is as follows:

Table-01: Scenario of respondents

Name of the District	Name of the UPs	Name of the UDCs	Categories of Respondents	No. of Respondents
Cumilla	Cumilla Sadar Dakshin	Jorkanon, Bijoypur, Jorekanan Purba, Dakshin Perul.	Monitoring Officials	4
			Entrepreneurs	6
			Beneficiaries	40
	Chandia	Maijkhari, Keronkhal, Suhilpur, Juag.	Monitoring Officials	4
			Entrepreneurs	6
			Beneficiaries	40
Total Respondents=				100

e. Data Collection Technique

In this research, different types of data collection procedures conducted to collect the primary and secondary data. The primary data was collected by using semi-structured questionnaire from the key respondents and asking set of questions from experts' interview. The secondary data was collected through content analysis from the research articles, text books and dailies while documents survey scheme from various webpage.

f. Data Analysis

The data was collected from both primary and secondary sources. After processing, the collected data were analyzed and interpreted by using some statistical tools and techniques. Moreover, the collected data was categorized, tabulated, analyzed by using SPSS (Statistical Packages for the social Sciences) method. It has also been used MS-Word, Excel for the purpose of analyzing the data.

VI. UDCs of Bangladesh: At a Glance

Union Digital Centers (UDCs) in Bangladesh are one-stop service delivery centers that provide information as well as a variety of governmental and private services. The Access to Information (a2i) program, which was established under the direct jurisdiction of the Prime Minister's Office (PMO) and with technical assistance from the United Nations Development Programme (UNDP) and the United States Agency for International Development, oversees the operation of the Access to Information (a2i) program (USAID) (Aziz, 2020). Rural populations got benefit from UDCs because they help them through the bureaucratic service delivery process.

Table-02: UDC at a glance.

Sl. No	Union Digital Centre	UDC value
01.	Total number of UDC	4551
02.	Total number of entrepreneurs	9102
03.	Citizens visit to UDC	3.20 million
04.	Total Birth registration	3,40,00,000
05.	Mobile banking service	3700 UDC
06.	Life insurance service	2770 UDC
07.	Telemedicine service	35,000 Citizens
08.	Computer literacy training service	45,000 Citizens
09.	Health service provided	1.45 million
10.	Birth registration	75 million

UDCs began in 2009 in 30 Union Parishads as a Quick Win project of the Local Government Division and the A2I Program. On November 11, 2010, the honorable Prime Minister of Bangladesh and UNDP Administrator launched the project in all 4,501 UPs across the country (Uddin, 2020). Each UDC is run by two young local entrepreneurs, one male and one female, who are overseen by a local advisory committee led by the UP Chairperson. The UP offers the center with both room and functionality. The Local Government Division works with the Cabinet Division and the Bangladesh Computer Council to build up the basic ICT infrastructure, which includes computers, laptops, printers, and webcam (Shakhawat & Bhuiyan, 2007). Entrepreneurs are allowed to build new buildings to help their businesses flourish while also assuring the center's societal sustainability by providing government information and services (Mursheda & Islam, 2021).

The UDCs have made it possible for rural residents to have access to information and services in a timely, cost-effective, and easy manner. UDCs provides the following services and information:

Table-03: UDCs services.

Services Offered at UDC	
Government Service	Commercial Service
Education / Admission / exam results	Typing / Data Entry
Government forms download	Printing & Photocopying
Birth and death registration	E-mail and Internet browsing
Overseas employment	CV and Job application
Passport / TIN (tax) certificate	ICT / English training
Health	Phone / Video conferencing
Livelihood information	Mobile Banking / Bank
Land	Scanning & Laminating
VGD/VGF card database	Photography
Agricultural Information	Online visa application/visa

The present government intends to upgrade it so that rural residents do not have to go to multiple government organizations. UDC will provide people with all of the services and information they need to live a tranquil existence. All citizens will receive one-stop service from a single location (Zaman & Sarker, 2021). To make it more successful, the Prime Minister's Office's Access to Information (A2I) has already created a website called E-Totthokosh, which is a compilation of all kinds of national information. As a result, it will now be a center of excellence.

VII. Findings and Analysis

Collected primary data from the field is analyzed systematically in the light of our research objective & analytical framework. The data were collected from the field through questionnaire survey, interview and survey methods. There were 100 respondents from eight Unions of two upazilas under the Cumilla district interviewed for this study. Based on the field survey some important findings are discussed here.

7. 1. Gender & Age

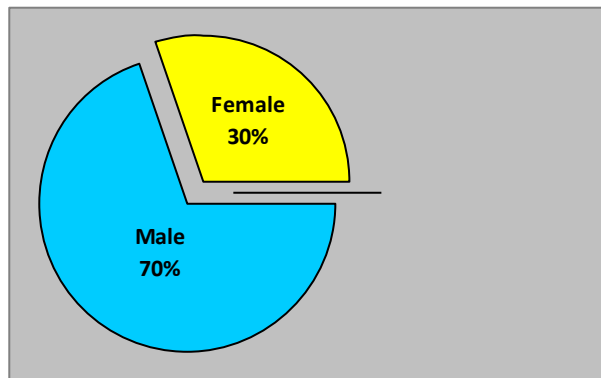


Figure- 01: Gender basis scenario of respondents.

Existing socioeconomic conditions as well as involvement with the social organizations, majority of respondents were male rather than female. From the above graph, there were 70 male and 30 female respondents as a sample and the graph reveals that 70 percent of the respondents were male and 30 percent were female.

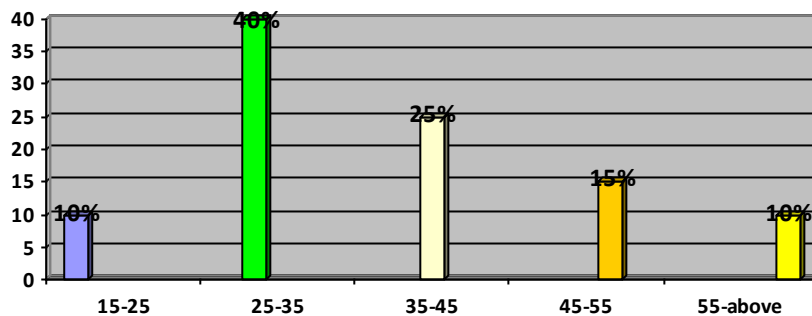


Figure- 02: Age of the Respondents.

According to the data, 10% of the respondents are between the ages of 15 and 25 years. The age range of 40% of respondents was (25-35) years. 25% of respondents were between the ages of 35 to 45 years and 15% were between the ages of 45 to 55 years. Finally, 10% respondents were the ages of 51 to above.

7. 2. Educational Status

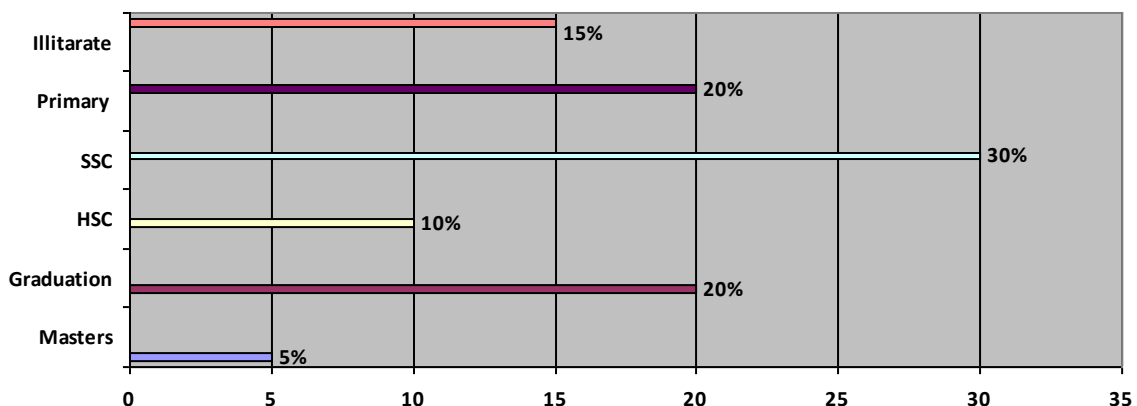


Figure- 03: Educational qualification of the Respondents.

According to the above graph, 25 percentage of respondents were either graduates or postgraduates. It's a good scenario that there were educated people in the community who understand the functions and duties of UDCs. On the other hand, illiterate respondents (those who can only sign/write their names but cannot read) account for 15 percentage of all respondents. Another, 30 percentage of respondents had finished primary school. Besides, 10 percent of respondents have completed high school or secondary level education. Only 10 percentage of those polled had a higher secondary education. As a result, maximum respondents have sufficient degree of knowledge and experience to cope with the civic issues and problems.

7.3. Marital Status

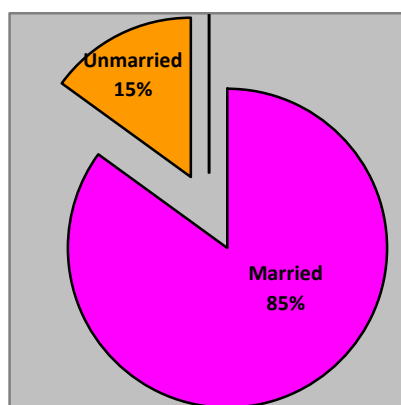


Figure- 04: Marital Status of the Respondents.

According to the above graph, the majority of respondents were married (85%) while 15% were unmarried. The respondents were used to go the UDC's for personal, family and business purposes.

7.4. Occupational Status of the Respondents

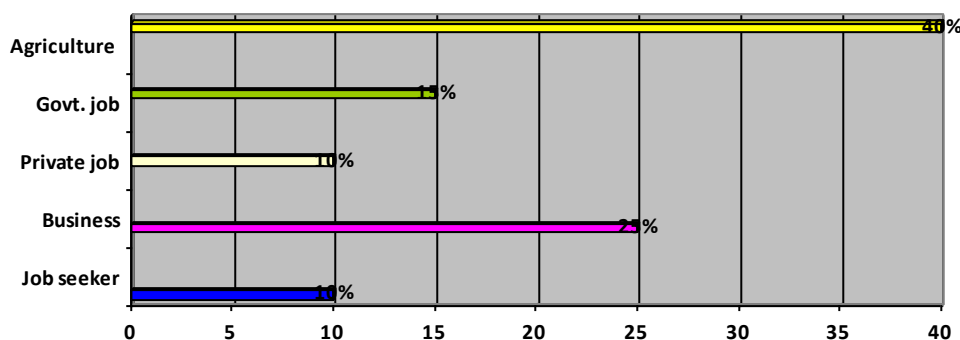


Figure- 05: Occupational Status of the Respondents.

According to the above graph, the majority of responders (40%) working in agriculture sector. Furthermore, 10% of respondents claimed they worked in a private job. They mostly worked for non-governmental organizations, private educational institutions, financial institutions and other similar entities. Another 25% of respondents said they ran a variety of businesses, including small and medium businesses, companies, and so on. Besides, 15% of those respondents stated that they worked in government job. Respondents in this group worked in education, health care, clerical work, and other related fields. Another 10% claimed that they were job seekers who used to go to the UDCs for job related purposes.

7.5 UDCs Location

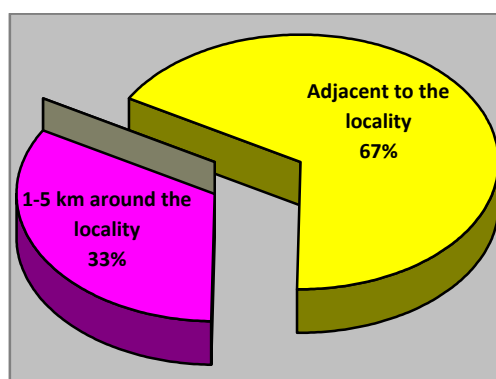


Figure- 06: Scenario of UDCs location.

According to this survey, around 65 percent of UDCs were located near to the locality, and 35 percent of UDCs were within 1km to 5km of the locality.

7.6. Opinions about e-service delivery



Figure- 07: Scenario of e-service delivery.

According to the graph above, 30% of respondents rated e-service delivery as "Good" and 23% rated e-service standard as "Very Good." Another 20% thought the e-service was "moderately Good," while 27% said the quality of the e-service was "Poor." From the above findings, UDC's facilitate e-services for the betterment of rural people and it is clear that the services of UDC's are between 'Good' and 'Very Good' level.

7.7. Accessibility of e-service delivery

The opportunity of customers' access to the e-services is one of the most important features for measuring the effectiveness of UDC. If the beneficiaries get the necessary services from UDC then it can be said that the rural peoples have sufficient access to the e-services.

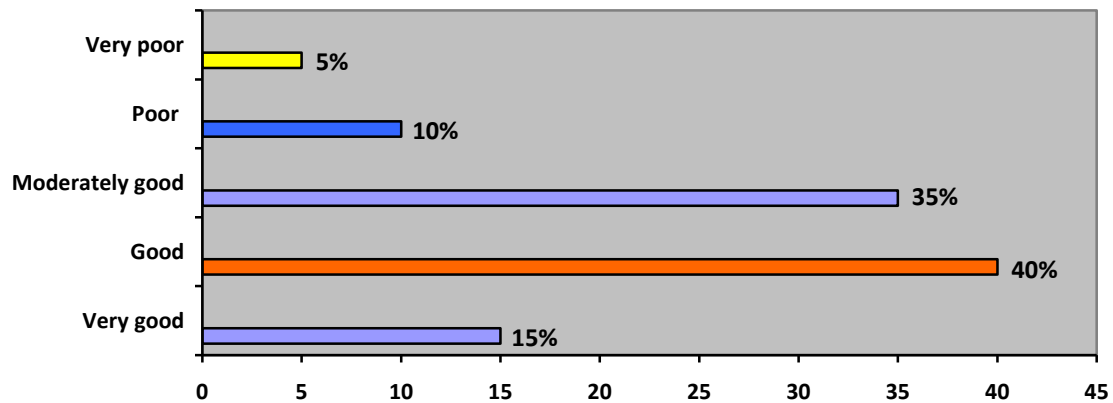


Figure-08: Accessibility of e-service delivery.

According to the graph, 15% of respondents said that e-service accessibility is "very good," while 40% said it is "good." On the other side, 35% of respondents said that the accessibility of e-services is "moderately excellent," while 10% said that the accessibility of e-services was "Poor". Additionally, 5% of respondents said that e-service accessibility was "Very poor."

7.8. Scenario of present e-service devices

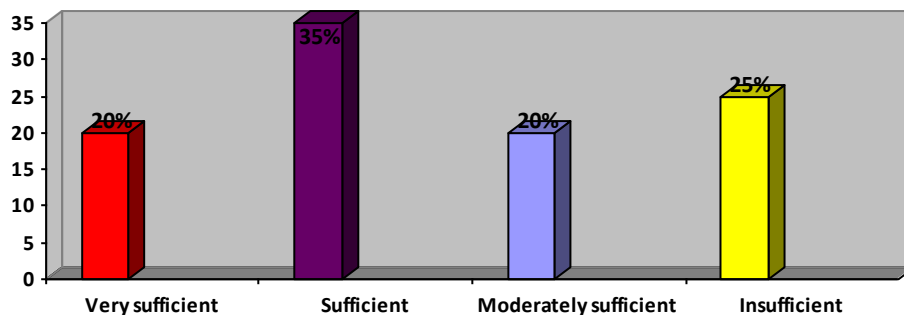


Figure-09: Overview of existing e-services equipment.

The above graph reveals that 20% respondents considered the existing e-services apparatus of UDC's were 'very sufficient'. Another, 35% respondents argued that the existing e-services apparatus of UDC's were 'sufficient'. Besides, 20% respondents considered e-services equipment's were 'moderately sufficient'. Again, 25% respondents considered that the equipment's were 'Insufficient'.

7.9 Reasons behind taking services from UDC

When the question has been asked to citizens that why they are using UDCs to receive service than traditional mode and whether UDCs have been able to fulfill their demands, their answer was measured from the following graph.

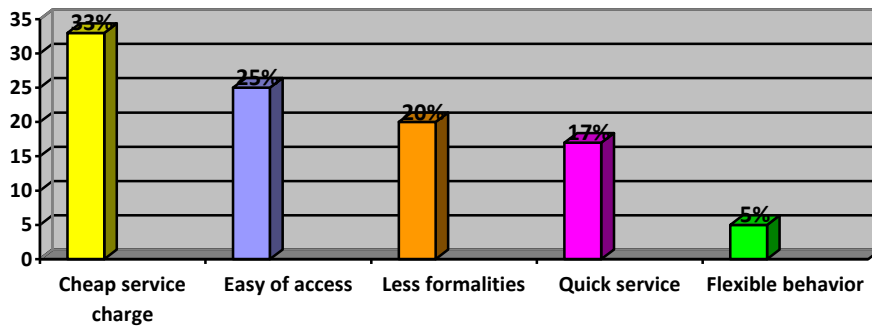


Figure-10: Reasons for using UDCs to receive service than traditional mode

The above diagram reveals that, the majority respondents (33%) taken the services due to the cheap service charge of UDCs. Besides, 25% respondents argued that easy to access was another causes to go the UDCs. Another, 20% respondents responded that less formalities of UDCs was another causes to go to the UDCs. On the other hand, 17% respondent said that quick services from the entrepreneurs make them encouraged to taken UDCs services. Besides, flexible behavior of the entrepreneurs was another causes said by 5% respondents.

7.10 Overview of internet speed

To determine the effective UDC, internet speed is very essential. Different e-services activities like social media, e-communication, e-mail, internet browsing, on-line banking, on-line shopping etc. largely depend on the internet speed. If the internet speed is in satisfactory level, service delivery satisfied the customers.

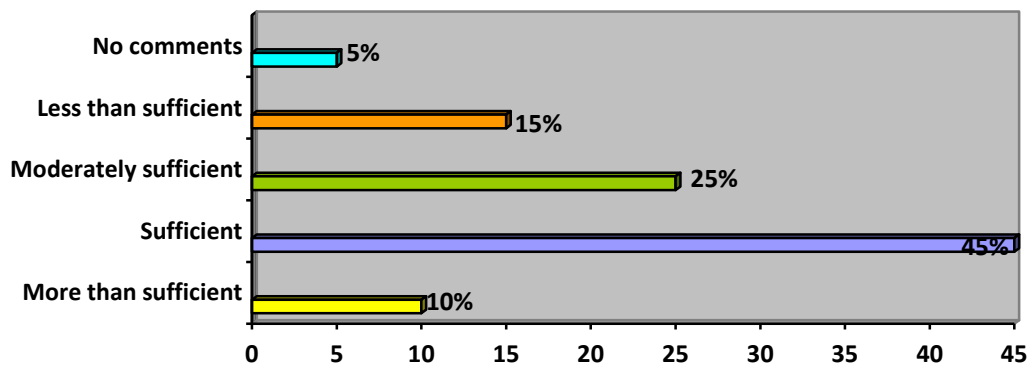


Figure-11: Internet speed of UDCs for e-service delivery.

From the above diagram, 10% respondents were "more than sufficient" with the internet speed. Another, 45% respondents responded that the internet speed were at 'sufficient' level and 25% respondents opined that the internet speed is 'moderately sufficient'. Again, 15% respondents argued that the internet speed is 'less sufficient' while 5% considered the internet speed was not feel interest to given their opinion.

7.11 Overview of electricity supply

To build up effective UDC, frequent supply of electricity is mandatory. In this regard, uninterrupted electricity supply is essential for smooth functioning of UDC respectively.

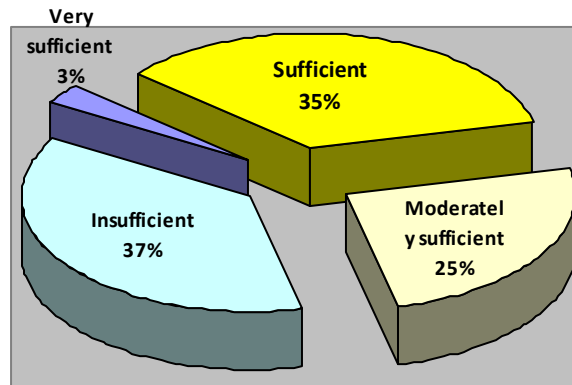


Figure-12: Overview of electricity supply.

From the above pie-chart, maximum respondents (35%) said that existing electricity supply of UDC was ‘sufficient’ where 3% considered that the electricity supply was ‘very sufficient’. Another, 25% respondents argued that the electricity supply is ‘moderately sufficient’. On the other hand, 37% respondents replied that electricity supply is ‘Inadequate’. From this picture, power supply scenario of UDC’s is more or less sufficient which ensures the satisfaction of rural people.

7.12 Availability of infrastructure/ equipment

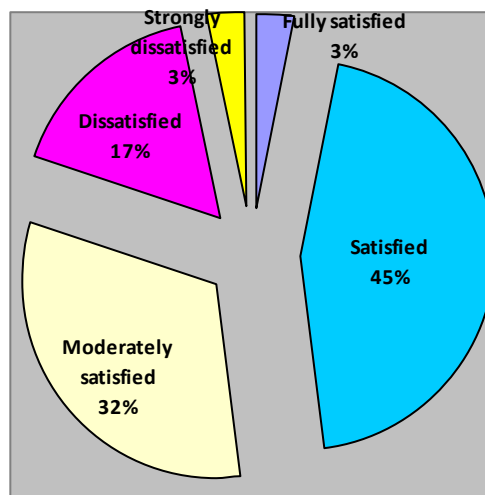


Figure-13: Availability of necessary equipment

In terms of necessary infrastructures/equipment 48% visitors said they are satisfied to a great extent, 32% are moderately satisfied and 20% were dissatisfied or fully dissatisfied. It is noteworthy to say, the equipment’s are available in most of the UDC but the main problem is in its proper utilization.

7.13. Scenario on Staffs attitudes

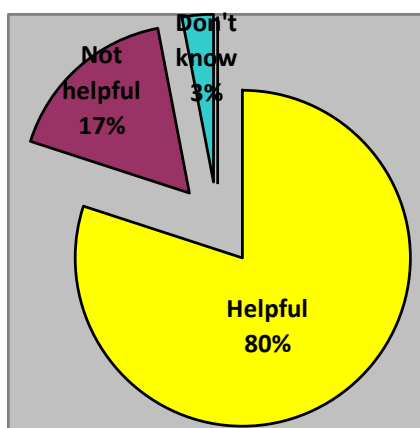


Figure-14: Attitudes of UDCs staffs.

From the above pie-chart, most of the respondents (80%) identified the manners and attitudes of UDC’s officials were cordial and cooperative. Another, 17% respondents argued that the officials’ attitudes were not helpful at all. On the other hand, 3% respondents didn’t feel any interest to response on this issue.

7.14. Perception about service charge

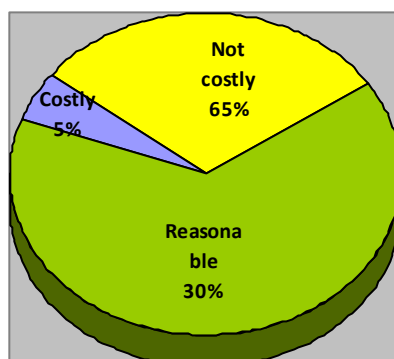


Figure-15: Opinion about UDC’s service charge.

From the above diagram, most of the respondents (65%) argued that the service charges of different services of UDC were in low cost. Another, 30% considered that the cost of UDC’s services were ‘reasonable’ which means the service cost were bearable. 5% respondents argued that the service cost of UDC’s were costly. More expectations were the main causes behind this kind of answer.

7.15 Basic Problems faced by the Respondents

The respondents faced difficulties during getting services from UDC. According to their problem confrontation index has been given here:

Table- 04: Scenario of Problems faced by the Respondents.

SI No.	Nature of Problems	Frequency (%)	Rank
01.	Poor publicity of services	28	1
02.	Slow internet speed	23	2
03.	Poor location of UDC	15	3
04.	Load shedding	14	4
05.	Lack of skilled manpower	6	5
06.	Lack of privacy	5	6
07.	Lack of infrastructure	4	7
08.	Lack of flexible behavior	3	8
09.	Service cost is high	2	9
10.	Poor management system	1	10

The table revealed that among the problems 'poor publicity of services' got the highest rank (28%). 'Slow speed of internet' was identified by the respondents as another major problem and ranked as second (23%). 15% respondents also argued that the poor location of UDC's services was made the mass people unable to take services properly. Due to lack of consciousness and also never arranging seminars, workshops about UDC's services rural people would not come to take the services. 14% respondents argued that load shedding was the another problem to take the services properly. The respondents argued that the load shedding hampered and interrupted the UDC's activities regularly. 5% argued that due to the lack of privacy rural people felt insecurity to take different services. Another, 4% said that lack of adequate infrastructures was another problem of UDC's. 3% respondents also argued that rude behaviors from the officials discouraged them to go there. 2% respondents argued that due to high service charge of offered services disappointed them to go there. Finally, due to the poor management system, 1% mass people didn't feel interest to take any service from UDC's.

VIII. Challenges of UDC's in Bangladesh

From the above discussion of the findings we have find out some important challenges of UDC's services in local level are given below:

- A. Delay of Service Delivery:** This is a typical issue for all sorts of information centers. Because UDCs are a freshly financed government project, these one-stop information centers are certain to fail for a variety of reasons. When services are providing through online, unexpected incidents happened in sometime. Because the staff behind these information centers is limited, managing that many individuals at once is undoubtedly a challenging task.
- B. Demand of high services charge:** The officers in charge and other staff members are basically underpaid and do not get a regular salary from the government, they rely heavily on the service charges collected from the users. Users are occasionally charged a high fee by the information officers. The rural population is becoming increasingly apathetic about UDCs unethical tendency.
- C. Low level of knowledge and skills about ICT:** Maximum UDCs are administered by people who have limited experience of ICT and other digital services. Users will be dissatisfied with the low quality of services if unskilled information officers and inexperienced personnel fail to run the UDCs correctly.
- D. Bureaucratic interference:** The bureaucratic problem might be a critical aspect in the digitization process's implementation, affecting user engagement and accessibility significantly. UDCs' usual operations are hampered by this sort of issue (Hoque, 2015).
- E. Lack of friendly behavior from UDC's Staffs:** In some cases, UDCs' staffs sometime misbehave creates some unexpected incidents. Many rural residents have complained that they are frequently handled in an unwelcoming manner, which makes them reluctant to visit UDCs on a regular basis.
- F. Insufficient Electronic Resources:** To deliver digital services, significant electronic resources are necessary to improve the digitization process. However, the majority of UDCs lack adequate electronic resources. The quantity of computers, scanners, photocopiers, and other electronic devices available is insufficient to satisfy the demands of many users at the same time (Begum, 2017).
- G. Lack of proper planning for providing services:** A well-planned institution may become participatory and beneficial in achieving its goals. To make UDC a productive institution, proper planning for information transmission to rural people's doorsteps is essential (Hoque & Sorwar, 2014).

IX. Recommendations

The following are some suggestions for upgrading UDCs in order to enhance citizens' satisfactions:

- 1. Increase of Infra-Structural Facility:** The government should emphasize UDC infrastructure in order to provide more up-to-date and proactive services to the rural citizens.
- 2. Development of Human Resource:** To make UDCs successful institutions for rural areas, the government should devote greater emphasis to human resource development programs. UDCs manpower should have suitable education and training programs in order to manage these institutions effectively.
- 3. Continuous and Uninterrupted Supply of Power:** Typically, Bangladesh is suffering from lack of power. Uninterrupted and continuous power supply is required to make UDCs more effective organizations (Tipu et al., 2020).
- 4. Insufficient allocation of budget:** UDCs are still short on funds to implement Digital Bangladesh. Every year, our government should allocate sufficient funds to ensure the successful operation of these one-stop information and service centers.
- 5. Increase of Institutional Capacity:** UDCs currently lack the institutional capacity to develop, organize, and administer various technical and other facilities (Saleheen, 2015).

X. Conclusion

Present government has given important emphasis on ICTs in all the government activities. UDC might be a trump card for the government in accomplishing the aim of 'Digital Bangladesh.' ICT has emerged as the most successful and effective strategic intervention for empowering citizens. UDC has reduced the gap between previously manual activities with the digital services (Biswas & Roy, 2020). The present situation of rural Bangladesh has changed dramatically in terms of receiving government e-services. Rural citizens are receiving faster services and being empowered with important livelihood information such as agriculture, health, education, land and employment opportunities (Das, 2019). People who are unable to read or write can use the e-services with the help of UDC operators. But there are some challenges to make it as a successful entrepreneurship. If the existing problems will be solved with the appropriate procedures, the UDC may undoubtedly bring the transformation in rural life.

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