Role of Information & Communication Technology (ICT) in Rural Poverty Alleviation

A Dissertation

by

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ID 05362002

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This dissertation is dedicated to my mother.

Abstract

For lack of access to information, poor people are facing problems in different ways. If the poor people do not know where employment opportunities are available they cannot get employment. A poor farmer needs to know about input and output markets to buy inputs and sell outputs. If a farmer does not know where he will get the appropriate price for his products, he will not get the right price. If he does not know which seeds will be better for his land he will not get the desired yield. If the poor people do not have the information about health related issues and different diseases they will suffer from ill health. This study explores how the poor people are getting information from the different media through Pallitathya Kendras (PKs), and how they are helping them in their efforts to alleviate poverty. Pallitathya Kendras are becoming a model for other entrepreneurs and NGOs because of their reliability for the provision of services in rural areas through advanced ICT tools and channels.

This study finds that when people visit and access information through Pallitathya Kendras they get benefit from them which is reflected in the improvement in their economic status. People do not get economic benefits directly from the Pallitathya Kendras but after using information from Pallitathya Kendras they can improve their livelihoods. If Pallitathya Kendras could have added some more services like: easily searchable local language and mobile infomediary with a bunch of other ancillary services they would have been more helpful for rural poverty alleviation.

Acknowledgement

I would like to express my sincere gratitude and appreciation to the following people who helped and inspired me to complete this thesis:

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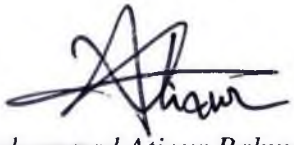
Dr. Ananya Raihan, Executive Director of D.Net for giving me the opportunity to do the dissertation and permit me to do the field work at Babrijhar Pallitathya Kendra (PK) for my dissertation.

Finally I am thankful to my parents and friends who have supported me in my research work.

Declaration

Except where duly acknowledged, I certify that this thesis is my own work under the supervision of **Dr. M.A. Hakim** of Brac Development Institute, BRAC University, Dhaka.



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List of Acronyms	
D.Net	Development Research network
RIB	Research Initiative Bangladesh
IKB	Information and Knowledge Base
BOI	Benefit on Investment
BDT	Bangladeshi Taka
ICT4D	Information and Communication Technology for Development
ICT	Information and communication technology
PK	Pallitathya Kendra
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding
DCI	Direct Calorie Intake
HCR	Head Count Ratio

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Chapter 1

1. INTRODUCTION:

Bangladesh, with a land area of 1, 47,000 sq.km and an estimated population of 140.6 million, is the world's seventh populous country (Census, 2007). The population growth rate has declined but still stands at 1.5% per year. In 2005, the Poverty Head Count Ratio (HCR) by Direct Calorie Intake (DCI) method was estimated at 40.4% at national level, 39.5% in rural area and 43.2% in urban area (HIES, 2006).

Poverty is multidimensional. It has many causes like lack of productive resources and skill etc. One of the main reasons of poverty is a lack of access to information. If the poor people cannot get the appropriate information they cannot come out of poverty. Today, main-stream understanding of poverty goes beyond a quantitative and one-dimensional approach. A multidimensional concept of poverty, based on the voices of those living in poverty, has emerged. Poverty is seen as the opposite of well-being, which includes more than income. Therefore, apart from the inability of the poor people to meet basic needs, such as nutrition, clothing and shelter, the concept of poverty also refers to phenomena such as disadvantages in access to land, credit and services (e.g. health and education), vulnerability (to violence, external economic shocks, natural disasters), powerlessness and social exclusion.

Income gap remains one of the core issues in the reduction of poverty.

Lack of assets is both a cause and an outcome of poverty. Low assets and low income are mutually reinforcing. There are powerful complementarities across assets – the benefits of one asset can depend crucially on access to another. In practical terms, assets include a variety of physical and intangible things like land, infrastructure and services. The denial of access to assets leads to a low level of productivity, missed opportunities, weak health and a low level of skills. Regarding Information and

Communication Technology (ICT) this means, access to technical equipment and structures – such as electricity, phone lines or computers as well as to markets, information and knowledge.

Vulnerability refers to external shocks as well as internal conflicts. It includes the risk of being subjected to physical violence because of low social status, gender or ethnic identity.

The world's poor are concentrated in South Asia and Sub-Saharan Africa (Figure 1.0). The Middle East and North America have only 0.5% of world's poor, Europe and Central Asia have 2 %, Latin America and the Caribbean 6.5%, East Asia and the Pacific have 23.2% Sub-Saharan Africa 24.3% and South Asia has got the most being 43.5%.

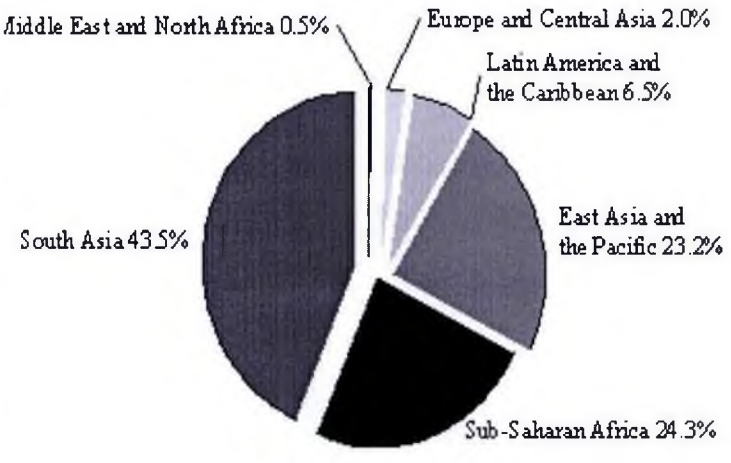


Fig 1.0: Where the world's Poor live

The World Bank reports that of the world's 6 billion people, 2.8 billion, almost half, live on less than US$2 a day, and 1.2 billion, a fifth, live on less than US$1 a day, with 44 percent living in South Asia. The goals set for 2015 by the international development agencies include reducing by half the proportion of people living in extreme income poverty, those living on less than $1 a day.

The World Bank report goes beyond the view of income levels in its definition of poverty, suggesting that poverty includes powerlessness, voiceless ness, vulnerability,

and fear. The assertion that a knowledge gap is an important determinant of persistent poverty, combined with the notion that developed countries already possess the knowledge required to assure a universally adequate standard of living, suggest the need for policies which encourage greater communication and information flows both within and between countries. One of the best possible ways to achieve this greater interaction is through the use of ICTs.

1.1 RATIONALE OF THE STUDY:

For lack of access to information poor people are facing problems in different ways as: If the poor people do not know where employment opportunities are available they cannot get employment. A poor farmer needs to know about input and output market to buy input and sell output. If a farmer doesn't know where he will get the appropriate price for his products, he will not get the right price. If he does not know which seeds will be better for his land he will not get the desired yield. If the poor people do not have the information about health related issues and different diseases they will suffer from ill health. This study explains how the poor people are getting the information from the different media through Pallitathya Kendra (PK), and how they are helping them in their efforts at poverty alleviation. PKs are becoming a model for other entrepreneurs and NGOs because of their reliability for the provision of services in the rural areas through ICT tools and state of the art channels.

The poor people do not generally have access to presently available information sources. They do not own TV and Radio, they cannot buy newspapers and in fact most of them do not know how to read newspapers. They do not also have adequate access to government extension services.

The Government of Bangladesh recognizes that ICT can make an important development impact, because it has the capabilities to overcome barriers of social, economic and geographical isolation, increase access to information and education, and enable the poor people to participate in most of the decisions that affect their lives. ICT is seen as an

indispensable tool in the fight against poverty and ICT has the potential to provide the nation with an unprecedented opportunity to meet the vital development goals such as poverty reduction, basic healthcare, and education far more effectively than ever was thought humanly possible.

To provide rural people, including the poor, access to information some pilot projects namely Telecentres, Pallitathya Kendra, Customer Information Center have been started by different organizations like Development Research Network (D.Net), Grameen Phone Ltd. D.Net established twenty four telecentres. The present research studied Pallitathya Kendra (PK) at Nilphamari Babrijhar which was started on April 01, 2007 by D.Net under Abolombon-II project.

However, only a few studies have been conducted on the impact of PKs on rural poverty alleviation. In this context the present study on the "Role of Information and Communication Technologies (ICT) on rural poverty alleviation" has been taken up to contribute to the understanding of the role of ICT in rural poverty alleviation.

1.2 STUDY OBJECTIVES:

The main Objective of this study will be to investigate how the poor people are getting information from different media through Pallitathya Kendras, and how they are helping them in their efforts at poverty alleviation. The specific objectives of the research will include: **a)** to identify the different services provided PKs, **b)** to determine the service delivery mechanism of PKs, **c)** to review the cost of service delivery and examine whether PK model is replicable and d) to know the impact of PKs on rural poverty alleviation.

1.3 EXPECTED OUTCOMES:

The study is expected to generate the following outputs: **a)** the study will contribute to the poverty alleviation; **b)** the study will help NGOs and young skilled knowledgeable people to set up such centers in their areas to reduce poverty.

1.4 OPERATIONAL DEFINITIONS:

ICTs: As with poverty, there is not one agreed definition of ICTs. In the ongoing discussion, three different approaches can be identified:

i) a technical one (i.e. the production and provision side)

ii) a content based approach (referring to the industries and organizations that create the information)

iii) the user side (focusing on diffusion and utilization)

Rural Poor: People who live in rural areas and who cannot fulfill all their basic needs are rural poor.

1.5 LIMITATIONS OF THE STUDY:

The present study has certain limitations that need to be taken into account when considering its findings. Because of time and resource constraints only a small sample of 31 respondents were chosen for the study. In most cases the respondents could not give the exact yearly benefits of the services they received from the PK. Further literature on the study area and ICT was not available adequately.

1.6 THE REPORT ORGANIZATION:

There are eight chapters in this paper. They are a) Chapter 1: Introduction, b) Chapter 2 : D.Net (Development Research Network), c) Chapter 3: Literature review, d) Chapter 4: Analytical and conceptual framework, e) Chapter 5: Methodology, f) Chapter 6: Findings of the Study, g) Chapter 7: Conclusion and Recommendation.

CHAPTER: 2

2. D.NET (DEVELOPMENT RESEARCH NETWORK)

D.Net was registered as a **"not for profit"** research institution under the Societies Registration Act XXI of 1820 with the Registrar of Joint Stock Companies, Bangladesh. D.Net is also registered with the NGO Affairs Bureau, Bangladesh.

2.1 BACKGROUND:

D.Net functions as an agency for undertaking and promoting research on national development and poverty alleviation through the use of ICTs. It works for integrating ICTs in the areas of agriculture, health, education, human rights, governance, employment, non agricultural activities, trade, disaster management, migration, environment, awareness and capacity building. In this endeavor, D.Net is in a process of developing business models for ICT-carried services for livelihood improvement both in urban and rural areas. Currently, D.Net works for creating common knowledge resource pool. It thrives to play a visible role in ICT and development policy and to share good practices in South Asia and beyond.

2.2 OBJECTIVE:

D.Net works for generating capacity at the grass root level for understanding implications of various issues, including ICTs for livelihoods. D.Net believes in multi-stakeholder partnership and emphasizes on collaboration for achieving common development goals.

D.Net believes that information is an essential economic resource. It strives for achieving

rights to information and the ultimate aim is to improve access to information by all. It's vision is poverty free world where knowledge plays its designated role.

Objectives:

- To work for development of the ICT network through out Bangladesh.
- To disseminate knowledge among the poor and SMEs (Small Medium Entrepreneur) of Bangladesh for using ICT to participate actively.
- To work for using ICT for agriculture, health, education, legal right, awareness building and capacity building for development.
- To organize different activities to develop resource pool which can be shared through the Internet and other ICTs.
- To conduct action and policy oriented research on ICT for development mainly in the context of Bangladesh.
- To function as an agency for undertaking and promoting study, research and dissemination of knowledge in development economics and others related fields to facilitate planning for national development and poverty alleviation through use of ICTs.
- To provide information and offer advice on modern research techniques and methodology for economics and other social sciences.

2.3 PROGRAMS:

The programs implemented by D.Net include:

a) BORN (Bangladesh Online Research Network):
b) Gunijan Building a Proud Heritage
c) Pallitathya (Sustainable Rural Livelihood Information Network)
d) BOBIN (Bangladesh Online Business Information Network)
e) Abolombon (Empowering People through Improved Access to Information on Governance and Human Rights)
f) Help Line (Bringing Knowledge and Information for the Poor A Call Away)
g) CLP Computer Literacy Program for Underprivileged Youth
h) ICT for Human Resource Development (ICT4HRD)

i) Research and Development

a) **BORN (Bangladesh Online Research Network):** BDResearch.org – the country's first website of its kind - is an online knowledge center containing huge research information on Bangladesh and many other offerings to facilitate research activity. It is actually the official website of BORN (Bangladesh Online Research Network) - a program initiated by D.Net -Development Research Network.
Website: http://www.bdresearch.org.bd

b) **Gunijan Building a Proud Heritage:** The "Gunijan" initiative is for presenting through the Internet the best scholars / experts of our soil, who inspired through their writings, words, scientific and artistic works and other creative pursuits.
Website: http://www.gunijan.org.bd

c) Pallitathya (Sustainable Rural Livelihood Information Network): With the advent of information and communication technology (ICT) revolution, there have been numerous initiatives across the globe to use these technologies for poverty alleviation and holistic socio-economic development. While there have been isolated stories of innovative efforts, a sustainable model for cost-effective use of ICTs in a rural environment is yet to emerge. One major problem in earlier efforts is that they have mostly not dealt with all major components of such a model – some have emphasized too much on establishing a "telecenter", but not enough on the "infomediary" (i.e. the person who works as an interface between an ICT tool and rural end-users), while some other efforts have focused too much on issues of connectivity, but not enough on understanding service requirements at the rural level and developing livelihood contents suitable for an environment, where many of the end-users are not very educated.
Website: http://www.pallitathya.org.bd

d) BOBIN (Bangladesh Online Business Information Network): BOBIN aims at providing business information to multi-stakeholders at home and abroad on a sustainable basis. BOBIN provides information for SMEs to get institutional and business

development support offered by various organizations. BOBIN invites all business organizations for win-win collaboration.

Website: http://www.bobin.biz

e) Abolombon (Empowering People through Improved Access to Information on Governance and Human Rights): The access to information on governance and human rights issues by the rural poor has several dimensions: lack of awareness about their rights, lack of awareness related to the role and obligations of government institutions functioning at grass-root level, lack of availability of information related to legal support, inadequate legal references for legal aid, among others.

The Abolombon is designed to improve access to legal information on governance and human rights issues for rural people using various ICT-based channels. The scope of governance in this project is limited within the "local governance" only.

f) Help Line (Bringing Knowledge and Information for the Poor A Call Away): Pallitathya Help-line is another project under Pallitathya Programme, which provides villagers a set of mobile phone numbers to make a specific query on any livelihood matters or to send some urgent information to D.Net for further action. The call is answered by a specialist at the 'help-desk' located at D.Net's headquarter. At present D.Net provides 'help-line' services in four villages of Nilphamari, Bagerhat, Netrokona and Noakahli districts. There are four bare-foot women mobile-phone operators who work as infomediary.

Website: http://www.teletathya.com

g) CLP Computer Literacy Program for Underprivileged Youth: The prime motto of the programme is to bridge digital divide among urban and rural children and youth in terms of computer skills. To build a knowledge society, as announced in the national Information and Communication Technology (ICT) Policy of Bangladesh, the country needs its young generation to be educated and acquainted with the state of the art knowledge of ICT. Bangladesh is trying to catch up, with the assistance of many

government and private initiatives to make ICT work for disadvantaged people of the country. In developing a base for skilled ICT professionals, children and youth in rural areas rarely get a chance to learn the use of computers and other ICTs, and thus do not know how this modern technology can be utilized to benefit their livelihood and future career. The "Computer Literacy Program" (CLP) is intended to facilitate the access of the rural disadvantaged people, particularly children and youth to ICT-based knowledge.
Website: http://www.vabonline.org/vabnj

h) ICT for Human Resource Development (ICT4HRD): Under ICT for Human Resource Development (ICT4HRD) program, D.Net conducts training and other human resource development program for different stakeholders. D.Net has conducted a course on "e-Government and e-Commerce" for government officials. Besides D.Net is running "Computer Literacy Program" to increase computer literacy among under-privileged youth of rural Bangladesh.

i) Research and Development: Under Research and Development program D.Net conducts different research and consultancy works for the promotion of different sectors. D.Net has conducted research for government and non-government organizations, private sector and donor agencies etc. Details of the D.Net's contribution under this program can be found under its publication button.

CHAPTER: 3

3. LITERATURE REVIEW

Since the application of ICT as poverty alleviation tool in Bangladesh only a few studies have been conducted on its impact on rural poverty alleviation. In this section only the relevant literature will be reviewed.

(Raihan Ananya, 2007) defines the implication of Pallitahya Kendra (PK) for the rural livelihood to alleviate poverty. A new concept of 'benefit of investment' (BOI) was introduced for assessing benefits received by a community in monetary terms, where applicable, against investment made in a community-based unit of *Pallitathya* information and knowledge system. Such an indicator was needed, as there is some doubt whether investment in building information and knowledge system for the poor and marginalized is justified, because there is competing needs for investment. The combined BOI for the whole *Pallitathya* experiment is 1:4.64, which means for each Taka investment for 15 months of operation of the system the benefit received by community would be Taka 4.64. The BOI for information and knowledge services was estimated 1:4.42, whereas BOI for income generating services was only 1:0.25. It is to be mentioned that the BOI mentioned above was estimated considering all costs including cost of operation for conducting research at head office level. If only local unit level cost is considered, the BOI was 1: 18.33. In this case, the BOI for information and knowledge service was 1:17.43 and for income generating service 1:1. The research findings strongly argue for 'public assets' and 'public goods' opposed to only financial sustainability argument, while income generating aspects should not be ignored for nurturing entrepreneurial mindset.

Another study (Raihan Ananya, 2005) shows the importance of information from different perspectives like human rights, governance, and development. Access to ICT is playing a vital role in these area. From the rights perspective, citizens must know about the government, their responsibilities; their rights as citizens, availability of services and facilities provided by the government and other institutions. Strengthening the voices of the people at all levels, fostering their participation in the development process and ensuring gender equality can significantly improve the poverty situation. Citizens' access to information related to functions of governments both at national and local levels, related to resource allocation for their constituencies and public reporting can significantly improve the situation in regard to exercising rights by them. However, much depends on the prevalence of the rule of law. The knowledge of citizens about the laws which are designed to protect citizens can significantly reduce abuse of power by many actors including government officials and law enforcing agencies. Common citizens do not have easy access to voter list, which is important to ensure their fundamental rights to choose their own government. Even receiving information about import duties without extra payment is not possible by a business entity. In addition, lack of easily understandable information related to tax payment is used for extortion of the common tax payers. In this context, Bangladesh government introduced fund for getting legal redress for the poor citizens. The fund remained unutilized as majority of citizens do not know about the existence of such a provision. Painfully, due to lack of information about the procedure of birth registration and its fee in a transparent fashion, citizens often have to pay even for being mere "citizens" of the country. In Bangladesh, in the name of official secrecy, majority of information about operations and activities of the government are not disclosed and such asymmetry in information availability creates fertile ground for corruption. Access to information can remove the grey areas as regards which is a secret and which is not, and can ensure more predictable access to required information by the citizens.

Government Perspective: Importantly, an overwhelming part of information and knowledge, required by the marginalized citizens is not a secret. They are open, but are not easily accessible by the people in the time of need. This dimension does not imply

that a right to information act is not necessary for the poor and vulnerable people. Rather, such an act can empower them in a true sense by increasing their reach to the information related to governance. Lack of transparency and accountability is a leading cause of non-cooperation by the government departments and deprivation of people from getting services from state agencies. Actual allocation of allowances and benefits like VGF (Vulnerable Group Feeding), VGD (Vulnerable Group Development) cards per village in the period of distress, eligibility criteria for VGD, VGF cards, responsibilities of union parishad to the people in a constituency, services availability and their eligibility provided by local government institutions, allocation of resources for local government institutions are extremely crucial for the marginalized citizens. Such information can help them to be organized and demand the necessary services from the institutions. There are examples, when availability of such information prevented corruption in the allocation of feeding and fund for the destitute.

From development perspective: It is well known that obstacles to access resources in a sustainable way play a crucial role in drawing the line between the haves and the have-nots. From a pure economic perspective, in a market economy framework, access to information is crucial in terms of having access and getting price advantage in the market. Unfortunately, there is no separate market for the poor producers of goods and services. Accordingly, access to information may drastically change the situation in favor of the poor producers within and for a country in the global context. On the other hand, while access to information related to market access is significant, it is also important to ensure access to information related to better production of goods and services, appropriate technology, information about self-employment related facilities, and wage employment for ensuring alleviation of income poverty. For addressing the non-income issues, the access to information related to education, technological know-how, affordable health care, legal and human rights are very crucial. In short, one can coin the gamut of information needs as "livelihood information needs". Lack of access to information is a critical source of disempowerment for the rural poor. This makes them vulnerable to exploitation by the middlemen, leaves them exposed to preventable diseases and accidents, deprives them of justice due to lack of availability of legal aid services,

and necessitates significant costs for finding simple information, among many other consequences. It is important to understand that all information services may not necessarily be disseminated by the government. NGOs, Media and Mobile operators may start providing some of the information. For example, D.Net experiments to provide livelihood information through common access point. Furthermore, less fashionable and more spread of ICT like mobile phones is being used for operating which is used for providing a variety of livelihood information to the village people through the concept of Mobile Information Lady, who moves from door to door for delivering information. As a result, people with disability, women with less mobility and such disadvantaged people can access modern ICT to resolve their livelihood problems through consultation with experts. As the generated income for such model is not adequate for financial viability, NGO-government, NGO donor collaboration model can be useful for making such service spread across the country. Following the success of D.Net's model Grameen Phone, the largest telecom operator announced that it will provide help line services on health issues to the village community.

CHAPTER: 4

4. PALLITATHYA KENDRA: A MODEL FOR DISSEMINATION OF ICT AT THE VILLAGE LEVEL:

Development models in the past, in general, have ignored the importance of information as an important ingredient for fighting poverty. The absence of access to information and knowledge has evidently created a bottleneck for rural poverty alleviation. The people did not have access to information for development efforts that are planned around by different agencies. However fortunately the current development paradigm endorses the concept of ICT and different experimentations have started across the globe to establish the role of ICT in poverty alleviation. Fortunately, Bangladesh was not kept untouched. In the history of Bangladesh's development, the impact of microfinance has created the biggest breakthrough in many ways. It fosters the monetization process in rural economy, empowers women by prioritizing their participation and ultimately links rural people in mainstream trading activities. It has been found that the poor have no separate market for trading. They have to compete in the same market. As the poor are competing in the same market with differentiation about market information, access to information become crucial factor for getting optimum benefits. The market mechanisms are controlled by a group of people while the differences are created through having or not having information. It is also remarkable that the rural economy has heavily shifted to non-farm economic activities from farm economic activities. Hence the issue of access to information remains the most crucial factor. While access to information related to market access is important, it is also important to ensure access to information related to better production of commodity, appropriate technology, self-employment facilities and wage employment for alleviation of income poverty. For addressing the non-income issues, the access to information related to education, technological know-how, affordable health care, legal and human rights are crucial. In short, it is a problem of access to livelihood information. And it is also notable that ICT can play a meaningful

role in reducing information gap among rural community if it is properly designed keeping the need in mind.

ICT for the poor requires a systematic effort to make it effective and active. Whenever we talk about information system for the poor, it is important to identify information that is important and essential for rural people. From research it has been found that rural people requires information, which is effective for their livelihood improvement. It is related to their farming process, healthcare, education, marketing, and environment and so on. Interestingly, the strongest channel for sharing and acquiring information is the know-how of the rural people which they inherited from their fore fathers, farmer's know-how to grow crop, control pest, villagers' know-how to control diseases receiving knowledge, transferred from generation to generation. In many cases, this knowledge works at a sub-optimal level, information and knowledge about scientific discovery relevant to improvement of livelihood is updated very slowly in rural circumstances.

When one wants to make ICTs meaningful to the poor, a set of factors needs to be considered:

a. Computer, mobile phone, the internet and other ICTs are just a tool. They can be meaningful when they are used for dissemination of relevant livelihood information in local language,
b. Poor cannot have the luxury to buy computer, mobile phone or other ICTs,
c. Majority of the community people are still illiterate, even can not read and write in mother tongue,
d. It is not feasible "to implant" an "urban person" in a village on a regular basis to serve "required information" to the poor.

Ownership of information resources by the rich can not benefit poor. It may worsen the existing situation.

Considering the above situation and the local context of Bangladesh, six-prong indicators have been identified for the Pallitathya model:

1. Common access point

2. Local content
3. Multiple delivery channels
4. Infomediary
5. Local ownership
6. Marketing and promotion

1. **Common access point:** For addressing the problem of affordability of ICTs by the poor, creating common access point is a general practice across the globe. "Telecentre" is a generic name for such common access point and it can be also called "Pallitathya Kendra". Ideally, a common access point should be furnished with various ICTs to provide livelihood information services through different channels which includes 1 or 2 computers or laptops, printer, mobile phone, internet connectivity (sometime kept as optional), scanner, digital camera, digital photography printer etc. The mainstream practice is that a common access point is to be established in a suitable location in the rural area, where people will come for getting access to livelihood information. It is also important to think about the marginal group of the community whose access is important for poverty alleviation like women in the community, disabled person etc.
2. **Local content:** Access to information to the poor essentially means access to relevant livelihood content in local language, which can be either browsed and searched by the poor or served by some "infomediary" to them.
3. **Multiple delivery channels:** Through the establishment of an information centre with various channels, their usefulness, acceptability, affordability and cost-effectiveness need to be tested. From research experiences one thing is clear that in certain circumstances some channels are more useful than others. For instance, mobile phones are useful and cost-effective for direct conversation with experts or specialists. However, not all types of information are possible to be disseminated through mobile phone and will not be cost-effective. The use of multi-channeled environment in an information centre is likely to make the centre more amenable to serving needs of various kinds.

4. **Infomediary:** As regards delivery of the contents, it is not possible, feasible and effective to make the content available to a large number of users through "telecentres" in their traditional meaning. It is a safe assumption that most target end users of information services through centres are non-users of most of the equipment at the information centre. For instance, a farmer or an old man with asthma or a divorced housewife will hardly have the training to sit down at a keyboard and mouse and search for the information they are seeking. The farmer can describe his crops and ask for the going rates at different accessible markets; the old man with the asthma can describe the symptoms of his ailment and ask for locations, fees and schedules of relevant doctors; the divorced housewife can explain her situation and ask for a possible recourse. In each of these situations lies the need for a physical person who knows how to understand the end user's specific situation and find a solution. This is precisely the role of the information operator, a kind of information intermediary or *infomediary*.
5. **Local ownership:** The most suitable ownership model of possible information centres for the community should be identified through the research. There may be various options for ownership of the information centres:
   - Association of poor people;
   - Local elite having philanthropic activities or social entrepreneurial mind-set;
   - Already existing information or services delivery institutions in rural areas; and
   - Rural youth entrepreneurs.
6. **Marketing and promotion:** Local workshop, individual group meeting, issue based campaign (agriculture, health, education, legal and human rights), meeting with local service providers, door to door visits, meeting at the villagers' working places i.e. at the crop fields with the farmers, at the kitchens with the housewives, at schools with teachers and students etc. were conducted by the infomediary regularly following a weekly work plan to conduct meeting and workshop in the area.

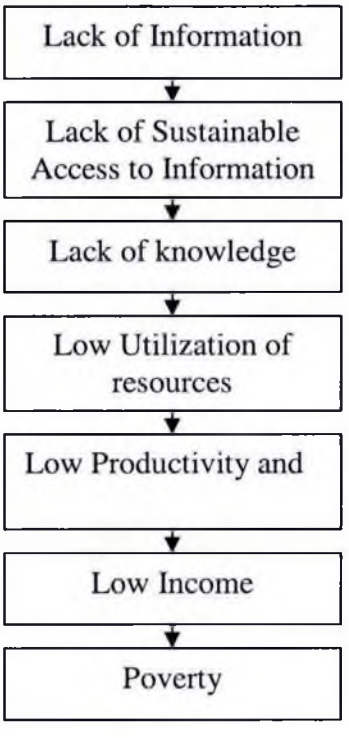
From the above traced some events and influences backward from beneficiary to inception and suggest a framework of how implementations engaged with relevant processes and principles on their way towards achieving poverty alleviation. The

framework so derived facilitates an understanding of how ICT can help alleviate rural poverty. Analytical framework will help to identify the reasons for rural poverty and conceptual framework will help how poverty can be reduced. We need both analytical and conceptual framework for our research.

Poverty and Information: Analytical Framework

In a poor country like Bangladesh, poverty is associated with lack of Information, lack of sustainable access to information, lack of knowledge, low utilization of resources, low productivity and employment; low Income etc. They are also the major criterion for identification of a poor household. The information services are directed towards and delivered from the local access points (Pallitathya Kendra) to the poor people who need them. Figure 4.1 outlines the analytical framework explaining the causality between information and poverty:

Figure 4.1 Analytical Framework



Conceptual Framework:

The conceptual framework as shown in Figure 4.2 facilitates an understanding of how Rural Information Centre (Pallitathya Kendra) can help to reduce rural poverty. PK's objective is alleviating the poverty. PK's activities are to provide livelihood information and if sustainable access to information can be ensured then poor people will be empowered which is the output of the PK and its impact will alleviate the poverty. This is a conceptual framework of Pallitathya Kendra Model.

Figure 4.2: Conceptual Framework

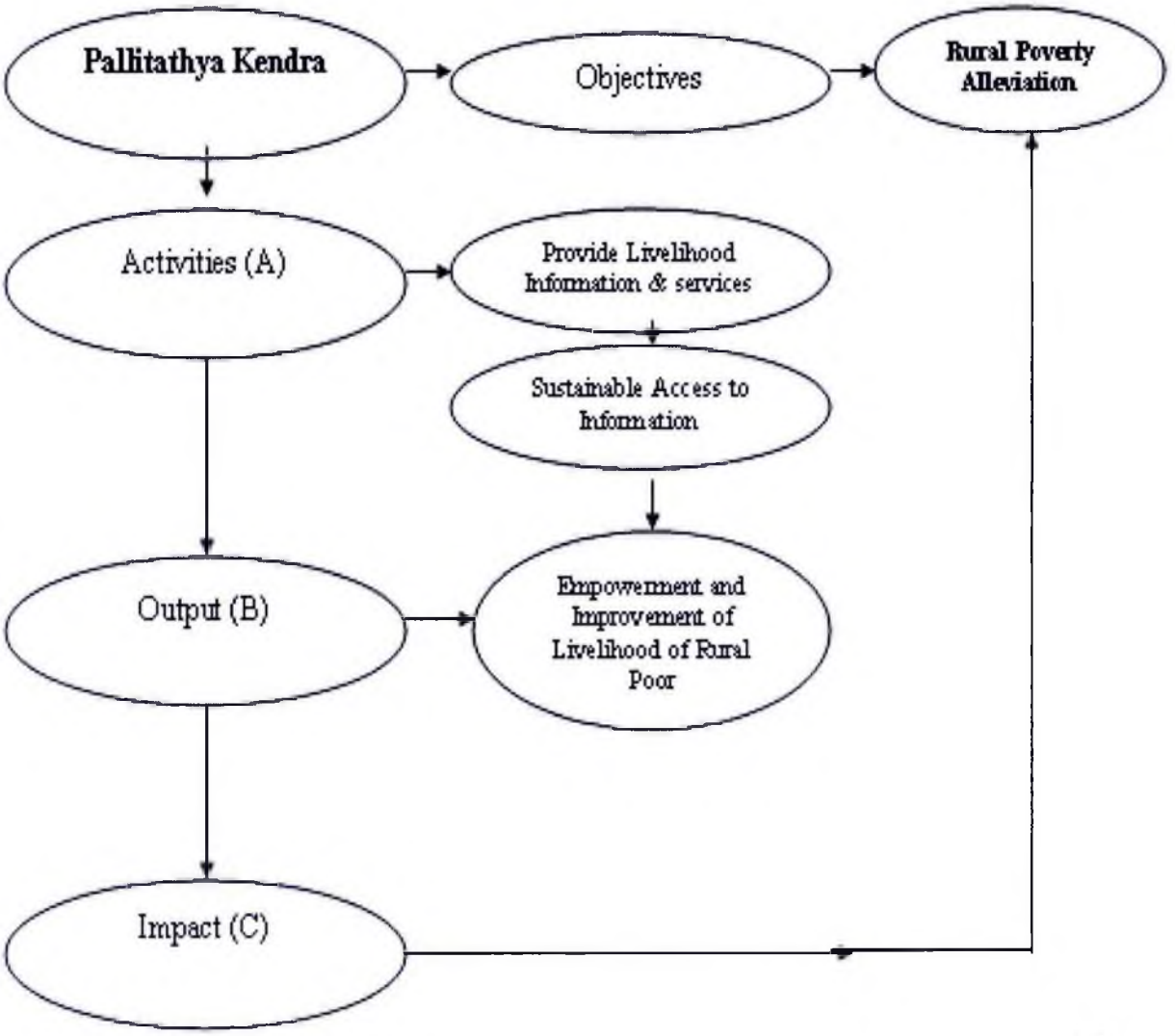


Table 4.1 shows the expected outputs and outcome of the provision of information services of a PK.

Table 4.1: Expected Output

Activities (Information Services)	Output	Output Indicator
Agriculture: a) Soil test, b) Seed information services, c) Seed Insect destroyer information etc.	Ensure better agricultural productivity	a) People are becoming aware about their crop selection for their soil b) People are using insecticide, pesticides and better seeds.
Government Services: a) All kind of Govt. forms & address delivery services, b) DV lottery services, c) Information about Hajj, d) Job information etc.	Ensure better e-governance.	People are getting the govt. forms without any hassle of govt. official and moving to the City. Employment opportunities are increasing.
Health Service: a) Nebulizer rental, b) blood pressure measurement, c) medicine service	Ensure better health	a) People are becoming aware about their health. b) Quantity of taking heath related services are increasing.

CHAPTER: 5

5. RESEARCH METHODOLOGY:

A research methodology, among other things, defines what the activity of a research is, and how to proceed to achieve the research objectives, how to measure progress, and what constitutes success. In social science research there are ample evidence of the use of either quantitative, qualitative or both research methods. There is a controversy over the justification of using qualitative or quantitative method in social science research. This controversy is centered on the scientific traditions with which the two methods are associated. The appropriate method in a research will depend on the objectives of the research, the research questions set and on the nature of study within a specific context.

In the present study the researcher has used the pure recall method to identify the role of Pallitathya Kendra (PK) in rural poverty alleviation. The researcher has used questionnaire for in-depth interview covering both quantitative and qualitative information. While interpreting and analyzing the questionnaires, descriptive statistics have been used partially to overcome the limitations of qualitative method of analysis and partly to describe properly some important aspects of the study. For instance, information like service recipients occupation, family size, and household information etc. were properly described with descriptive statistics.

5.1 SELECTION OF THE STUDY AREA:

For this study Pallitathya Kendra (PK) at Babrijhar village was selected. The PK's catchment areas include 5 villages and it covers 200 families. The Babrijhar village is under Chapra Sharomjani union, Sadar Upazilla of Nilphamari district.

5.2 SAMPLE:

For this study researcher went to the filed and randomly selected 31 people from among 600 for direct interview who directly took services from the Babrijhar PK. The researcher used a semi structured questionnaire for collecting information.

5.3 METHOD OF DATA COLLECTION:

Considering the resources and time constraints the researcher himself conducted the field work. Babrijhar Pallitathya Kendra was founded in 2005 under a funding of Research Initiative Bangladesh (RIB) and from 2007 it was funded by Manusher Jonno Foundation under Abolombon-II project. This PK is operating in 5 villages. The research was therefore conducted after getting the primary data by filed survey USING questionnaire. A detailED questionnaire was designed for this research. The detailed data sources are given below:

Primary Data: The primary data were collected through intensive fieldwork.

Secondary Data: The secondary data were collected from D.Net.

Questionnaire: Questionnaires are flexible and adaptable to a variety of research designs, populations and purposes. Questionnaire-based surveys are a form of research whose quality depends on the frankness of the subjects' responses.

Interview Procedure: The researcher took in-depth interviews of the service recipients. On average it took 20 to 25 minutes to fill a questionnaire. The respondents were so cooperative that they were interested to spend more time and also encouraged other recipients who took services from this PK to participate in the interview.

Case Study: Two case studies were also made for having in-depth idea about the impact of PK on poverty reduction.

5.4 ANALYSIS AND INTERPRETATION OF DATA

As mentioned above, this study has used primary data collected through in-depth interview of the service recipients of PK. Researcher produced the tables, graphs,

frequencies, and other summary of statistics from the data gathered through the questionnaire.

CHAPTER 6:

6. FINDINGS OF THE STUDY

Sex and Age Structure of the Respondent:

Under this study there were a total 31 respondents randomly selected for in-depth interview. Among them most belonged to age bracket 20-35+ (Table 6.1) and they are relatively young. Table 6.2 shows that the majority of the respondents were male (65%).

Table: 6.1 Age of the Respondent

Age Range	Number	%
<20	12	39
21-25	5	16
26-30	2	6
31-35	6	19
36-40	0	0
41-45	2	6
46-50	3	10
>50	1	3
Total	31	100

Table 6.2: Respondent Sex

Sex	Number	%
Male	20	65
Female	11	35
Total	31	100

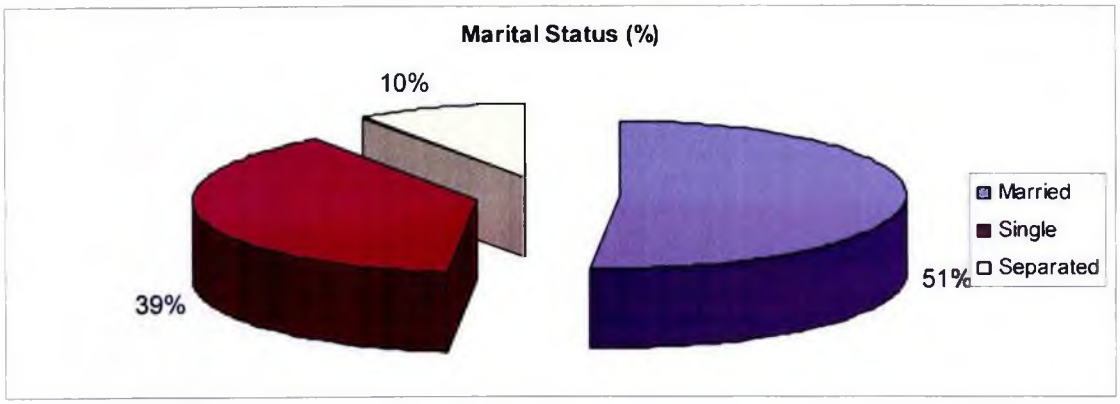
Marital Status:

It was found that among the 31 service users about 52% people were married, 39% were single and the rest 10% separated due to different reasons. The details of marital status of the respondents are given in Table 6.3.

Table 6.3 Marital Status:

Marital Status	Number of Service User	%
Married	16	52
Single	12	39
Separated	3	10
Total	31	100

Figure 6.1: Marital Status



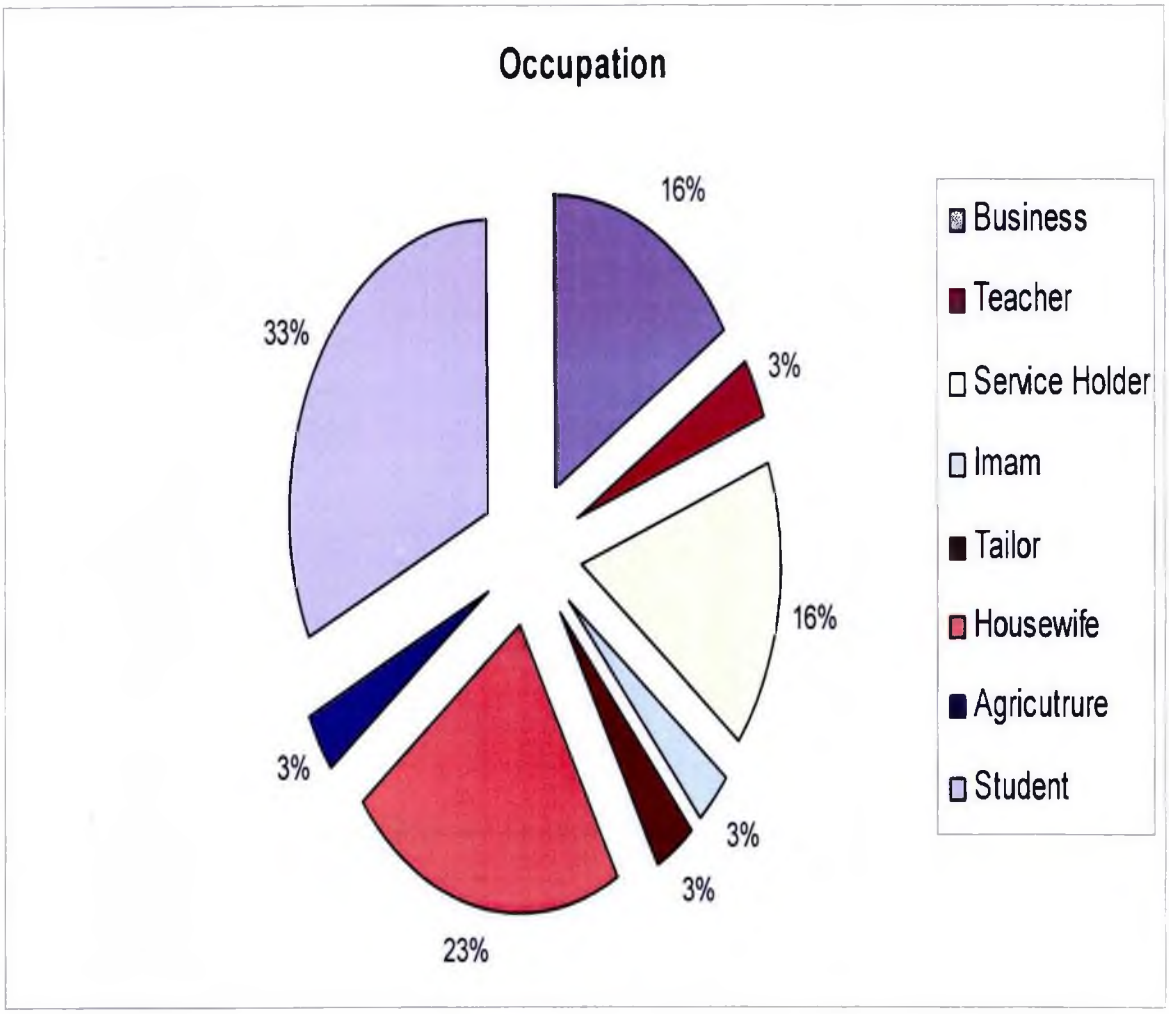
Occupational Status of the Respondents:

It has been found that service users are from different occupations and most of them are student. The students are taking the services from Pallitathya Kendra because it is situated near a Govt. primary school and they are much eager to use the new technology. The details of occupational status of the respondents are given below in Table 6.4:

Table 6.4: Occupational Status of the respondent

Occupation	Number	%
Business	5	16
Teacher	1	3
Service Holder	5	16
Imam	1	3
Tailor	1	3
Housewife	7	23
Agriculture	1	3
Student	10	32
Total	31	100

Figure 6.2: Occupational Status of the respondent



Knowledge about the services of Pallitathya Kendra:

It was found that most of the service users know about the different categories services provided by the PK.

Table 6.5: Knowledge about PK

Knowledge about PK	Number	%
Information is available	17	20
Computer training is available	1	1
Computer Compose	6	7
Studio Service	13	16
Internet is available	6	7
Health Service is available	14	17
Agriculture Service is available	15	18
Poultry & Live Stock Service is available	1	1
Fisheries Service is available	0	0
Education Service is available	4	5
Government Service is available	0	0
Non-Farm Service is available	0	0
Law & Human Rights Service is available	7	8
Total	**84**	**100**

Information Service Cost:

Among all the services, Health, Agricultural & Educational services are mostly used by the respondents. Averages cost per service is reasonable and people are happy to take these services.

Table 6.6: Average Costing of Service

Service	Average costing in BDT per service
Agriculture	9
Fisheries	2
Poultry & Live Stock	2
Non farm	2
Health	10
Education	8
Law & Human Rights	2
Government Service	4
Ancillary Service	5

Reason for taking services from Pallitathya Kendra:

The respondents have taken services from the PK because the cost is low and easy to get. It was found that 51 % respondents have taken services because the cost is low and 26 % have taken services because they are easy to get.

Table 6.7: Reason for taking services from Pallitathya Kendra

Reason	Number	%
Low Cost	29	51
Easy to Get	15	26
Dependable	8	14
On time delivery	2	4
No other media is available	3	5
Total	57	57

Use of Different Media of Delivering Information Services:

The following table shows the uses of each media by the 31 respondents. The verbal service was mostly used and it was found that email was least used. Respondents were not familiar with email services.

Table 6.8: Service Media

Service Media	Uses
Verbal Service	14
Print	8
Answer through Mobile Phone	7
Answer through Email	1
Answer through Letter	3
Video	10
Internet	5
Photography	3
Computer Compose	5

Service benefits of Pallitathya Kendra:

By receiving and using the services from the PK people received economic benefits. They were able to increase their knowledge which helped them make decisions (Table 6.9).

Table 6.9: Service benefits of PK

Nature of Benefit	Number	%
Economic	17	17
Assist in household decision making	1	1
Social status or value increase	9	9
Increase importance in family	11	11
Freedom of expression	14	14
Increase in understanding level with local people	15	15
Increase in knowledge level	28	28
Increase in Know about other countries	4	4
Others	1	1
Total	100	100

Economic impact (Impact on income of the beneficiaries):

After taking the services from the Pallitathya Kendra (PK), the respondents were able to increase their income (Table 6.10). Before using the service majority of the respondents were in the low income bracket. The situation improved after their use of information from PK.

Table 6.10: Impact on income of the beneficiaries

Income Range	Before	After
>1000 Tk.	9	4
1001-2000 Tk	9	7
2001-3000 Tk	7	9
3001-4000 Tk	4	7
4000^{+} Tk	2	4
Total	31	31

Use of PK for mitigating risk:

People used PK for mitigating risk. After getting the information 25 respondents were able to use the right kind of pesticides which helped them save their crops. Without information from the PK they would have used the wrong kind of patricides which would have damaged their crops.

Table 6.11: Use of PK for resolving risk

Response	**Number**
Yes	25
No	6
Total	31

Knowledge about the utility of computer:

Pallitathya Kendra has got computers. From there people know about the computers and the utility of the computers. Most people know computers as an information delivery machine and as a word processor (Table 6.12).

Table 6.12: Knowledge about the utility of computer

Item	Number
Different Information is available through Computer	31
Word can be processed	28
As a mean of Entertainment	16
Can talk with people who live in abroad	15
Do not know	0
Others	0

Knowledge about the utility of internet:

Pallitathya Kendra provides internet service. From there people know about the internet and the utility of internet. It was found that all the people who took services from PK know about internet (Table 6.13). This is a positive sign that people are becoming familiar with internet because of PK.

Table 6.13: Knowledge about the utility of internet

Item	Number
Can communicate with abroad	11
Different Information is available	15
Exam Result is available	18
Different News are available	16
Others	0

Use rate of computer in the Pallitathya Kendra:

People know about computers from the PK but not all of them are familiar with the use of computers (Table 6.14). It was found 39 % of the respondents used computers in the PK and 61% said they did not use it.

Table 6.14: Using rate of computer in the Pallitathya Kendra

Response	Number	%
Yes	12	39
No	19	61
Total	31	100

Use rate of internet in the Pallitathya Kendra:

People know about computer & internet from the PK but not all of them used internet services (Table 6.15).It was found that 29 % of the respondents used internet facility in the PK but 71% did not use it.

Table 6.15: Uses rate of internet in the Pallitathya Kendra

Response	Number	%
Yes	9	29
No	22	71
Total	31	100

Case Study 1:

Name: Mohammad Jahedul Haq Shah; Age: 49 years; Occupation: Farmer; Address: Moqtarpara village, Charoikhola Union, Sadar Upazilla of Nilphamari district

Mr. Jahedul Haq Shah was thinking about the higher educational of his son Mohammad Asaduzzaman Shah in a reputed university. He was looking for different sources to help him get rid of his anxiety. He looked for government agencies to help him out. But he failed to get any help. In this context, his anxiety increased day by day. Suddenly he got a chance to meet mobile lady of Babrijhar Pallitathya Kendra. She invited him to visit the centre as early as possible. Then Mr. Jahedul Haq came to the Kendra on February 20, 2006 to get information regarding his son's admission test date at Rajshahi University. Afterwards, he came to the centre on March 9, 2006 to get information for his son;s admission into Jahangir Nagar University and Khulna University through mobile-to-mobile phone based Helpline service. Using the information service from the centre, Mr. Asaduzzaman Shah participated in admission tests in different universities. He also got the admission test results from the Pallitathya Kendra. In fact, Babrijhar Pallitathya Kendra is the only place in the area where local people can get such education information services. Mr. Jahedul came to the kendra again on 11 March, 2006 to get his son's admission test result at Maolana Bhashani Science & Technology University located at Santosh, Tangail. With the information received from the kendra, Mr. Asaduzzaman Shah got himself admitted in Textile Engineering Department of Mawlana Bhasani University on April 6, 2006. Mr. Jahedul was so grateful that he has became a local promoter of the kendra's various services and visits the kendra every now and then to receive different services.

Case Study: 2

Name: Ansarul Islam; Age: 17 years; Occupation: Currently soldier in Bangladesh Rifles; Education: Secondary School Certificate (SSC); Address: Babrijhar village, Chapra Sharomjani union, Sadar Upazilla of Nilphamari district

After passing Secondary School Certificate (SSC) exam in 2006, this lively young man was wandering about getting a job somewhere to live his family's livelihood. He started reading daily the newspapers carefully to look for job advertisements. But the dailies reach his area usually at noon or in the afternoon not on a regular basis. Then he heard from the villagers that newspapers are available at Babrijhar Pallitathya Kendra. He also came to know that Babrijhar Pallitathya Kendra also provides employment information. Then he started visiting the kendra to read newspaper advertisement posted in the Kendra's notice board. Then the kendra manager of Babrijhar Pallitathya Kendra introduced himself to Mr. Islam. Thus, he became familiar with the centre manager and started visiting the centre from time to time. He came to the centre and learnt about job opportunity in Bangladesh Rifles as a soldier in the early January of 2006. The kendra manager showed him the advertisement for recruitment. Mr. Islam also learnt that it is important to keep specific body weight and blood pressure to qualify for the admission test of Bangladesh Rifles (BDR). But in the kendra he did not have any information regarding body weight and blood pressure. The Kendra manager had this knowledge from his personal experience. The kendra manager built up a rapport with Mr. Islam. Mr. Islam started visiting the centre regularly to get physical training from kendra manager. Thus, he gained a satisfactory level of weight and blood pressure to qualify for applying at BDR. Although assisting Mr. Islam in physical training was not the task of any centre staff the service was given as a point of social responsibility performed by infomediaries of a Pallitathya Kendra. All of their efforts were successful. Mr Islam passed the physical and fitness test and he was finally selected as a soldier of BDR. Thus Mr. Islam's dream for a job to serve the nation as BDR became a reality. Mr. Islam was now convinced of the usefulness of the services of the PK and encouraged to visit the PK receive it;s services. Presently 20-25 of Mr. Islam's friends are visiting the centre almost everyday to

read newspapers through online and themselves about the availability of jobs hardcopy versions.

CHAPTER 7:

7. CONCLUSIONS AND RECOMMENDATION

7.1 CONCLUSIONS:

The Babrijhar Pallitathya Kendra, a primary information dissemination platform is making high-end information available to many poor & marginalized people of Babrijhar. By enabling the creation of knowledge networks in the village. The PK is making high-end information available in a cheaper and effective way. Thus the poverty of information is reversed indeed.

The study shows that alleviating poverty with access to ICTs is not as straightforward as merely installing the technology or giving direct access to ICTs, but it is not conceptually that complex either. Provided a few relatively simple principles can be followed, it seems likely that widespread poverty alleviation can be achieved. The main challenges are not actually in the technology, but they lie in the careful co-ordination of a disparate set of local and national factors, each of which can derail efforts. As a cross-cutting, multi-dimensional approach to development, investing in ICTs can stretch implementation energies to the full and they challenge traditional approaches to development, but they carry the reward of substantial improvements in the daily lives of millions of poor people. The framework for poverty alleviation is offered as a tool for guiding efforts towards achieving this. It allows for a full consideration of the range of relevant critical factors prior to embarking on implementations as well as for post-hoc reflections on their outcomes. The framework represents a first effort, and it is acknowledged that other, similar, tools exist. It is expected that through a combination and further synthesizing of experiences and observations, the framework can become a practical tool for use by planners and policy-makers with general applicability in multiple contexts. Bangladesh's development achievements are impressive; a steady pace of economic growth, success in exports of ready-made garments, strong increases in primary education enrollment and

girls' education, striking reductions in fertility and infant mortality rates, widespread immunization, increases in food production, improvements in disaster preparedness and flood relief, and the emergence of an impressive NGO system and grassroots strengths.

7.2 RECOMMENDATIONS:

Based on it's findings, the study recommends that, many more PKs should be set up in the rural areas following the Babrijhar model. The relevant government agencies, NGOs like BRAC, ASA and local government institutions can work together to set up such PK which will contribute significantly to poverty alleviation.

To make PKs more useful, researcher also makes the following specific recommendation.

a. New ancillary services: A new range of ancillary services can be added like: Photocopy machine, low cost digital studio, mobile repairing services, and different training courses to make the PK more dependable and sustainable.
b. Content: To deliver the appropriate information to the rural poor for alleviating poverty local language content is an important part. Though there is content available in the PK but it needs to be updated frequently whenever update is available. Moreover if the content can be freely available and the content is audio visual based then it will be more effective for the rural poor.
c. Upgrading Infomediary: If the quality of an infomediary can be upgraded and he/she can travel to the every household of the relevant village with different ICT tools and information then telecentre will be mobile. For this every people will get the information services in a cheaper and convenient way.

d. **Availability of telecentres[1] across the country:**

It may be pointed out the after the implementation and positive impact of Pallitathya Kendra at Babrijhar D.Net has started a project with support of Manusher Jonno Foundation named Abolombon-II and established 24 Pallitathya Kendra all over the country with the help of different national NGOS. Now there are 8 telecentres running in Nilphamari district. Other NGOs as well as other people are becoming interested in setting up such Pallitathya Kendra. Now there are 1109 telecentres like Pallitathya Kendra which are managed different NGOs and under the different brand name. In Nilphamari district alone there are 8 telecentres.

[1 **Telecentre:** Is an Information Centre where people will get their livelihood informations and other ancillary services. Now 1077 Telecentres are available in Bangladesh, Source: Website of Bangladesh Telecentre Network (www.mission2011.net.bd)]

Glossary

Ancillary services: Ancillary services are included in a *Pallitathya Kendra* mainly for income generation. Major ancillary services are soil test, photography, computer compose and print, commercial mobile phone services, internet browse and e-mail, nebulizer rental service, blood pressure measurement, height and weight measurement, higher education admission service, DV application, scan, government forms etc. These ancillary services are available in an integrated form with a *Pallitathya Kendra* based on the demand of a community. The selection of services is made in such a way that additional skills requirement is not necessary.

Rural Information Centre: For addressing the problem of affordability of ICTs by the poor, creating common access point is a common practice across the globe. "Telecentre" is a generic name for such rural information centre. Ideally, a rural information centre is furnished with various ICTs to provide livelihood information and knowledge services through various ICT and Non- ICT channels.

Helpline: Helpline is a mobile phone based call centre which provides experts' opinion and advice to grass-roots people at the point of their need. *HelpLine is* set up with 8 livelihood experts equipped with ICT-based system to respond to the quires related to rural livelihood. For responding to the queries, the *Helpline* is equipped with database system, which is used for searching of answers to questions and disseminating them to villagers.

Infomediary: *Infomediary* is an information literate person, from within a community, who is for addressing the problem of double illiteracy of the community beneficiaries. S/he is a human interface between ICT tools and rural illiterate and print-disable people for accessing livelihood content and other services.

Pallitathya Kendra (PK): *Pallitathya Kendra* is a common access point at the community equipped with different ICTs like computer, mobile phone, internet connection etc. to ensure access to information for the rural people.

Pallitathya: *Pallitathya* means 'rural information'. For the *Pallitathya* model, the term *Pallitathya* is chosen to mean the type of information that rural people need for improving their livelihood as well as the information that rural people have to create the sharing and learning information and knowledge platform.

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