

**EXPLORING THE IMPLEMENTATION CHALLENGES OF
COMMUNITY INFORMATION CENTRE (CIC) PROGRAMME
IN THE GA EAST MUNICIPALITY OF THE GREATER
ACCRA REGION OF GHANA**

BY

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DECLARATION

I Mohammed Ibrahim do here by declare that this thesis is a record of my own research and has neither been submitted in part or whole to any institution elsewhere for an award of a degree. References made to the works of other researchers and authors have been duly cited.

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DEDICATION

This work is dedicated to Allah, whose wisdom and abundance of grace made it possible for me to successfully complete it.

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LIST OF ABBREVIATIONS

CIC-	Community Information Centre
CILC-	Community Information and Learning Centres
DA-	District Assembly
FGDs-	Focus Group Discussions
GIFEC-	Ghana Integrated Fund for Electronic Communication
ICT-	Information and Communication Technology
IPA-	Interpretative Phenomenological Analysis
IT-	Information Technology
ICT4AD-	Information and Communication Technology for Accelerated Development
ITU-	International Telecommunications Union
LLL-	Life Long Learning
NDPC-	National Development Planning Commission
NFE-	Non-formal Education
NFED-	Non-formal Education Division
MCIC-	Multipurpose Community Information Centres
MMDAs-	Metropolitan Municipal and District Assemblies
MOC-	Ministry of Communication
OPD-	Out-Patients Department
PCs-	Personal Computers
PHC-	Population and Housing Census
UNDP-	United Nations Development Programme
USAID-	United States Agency for International Development
UNESCO-	United Nations Educational Scientific and Cultural Organization

ABSTRACT

The advancement in information and communication technologies (ICTs) over the last three decades or so has created opportunities in all sectors of human society to solve the human development problem. One of the practical ways of exploring ICTs to accelerate development in remote and underserved communities is through the introduction of the concepts of Community Information Centres (CICs). CICs have contributed to accelerated development in the developed world, however investment into CICs in Africa specifically Ghana has not yielded the expected outcome.

The study therefore explored and described the challenges confronting the implementation of Community Information Centre (CIC) programme in Ga East Municipality in the Greater Accra Region of Ghana. Four objectives served as a guide in this study namely:

1. To examine the nature of CIC programme and their functions in Ga East Municipality
2. To explain the source that inform the construction of the ICTs at the CIC in Ga East Municipality
3. To study the process used in the delivery and implementation of the CIC programme in Ga East Municipality
4. To examine the key challenges affecting the successful implementation of CIC programmes in Ga East Municipality.

The study adopted a qualitative approach relying on the interpretative phenomenological design specifically, realistic phenomenological approach to capture the views and lived experiences of participants in the study. A total of ten participants were engaged in this study; the participants were put into two separate focused group discussions in which they discussed about their understanding of their lived experiences on the topic of the study. The study used Interpretative Phenomenological Analysis (IPA). The IPA approach was used to make sense

of the phenomenon under investigation, and explored the meanings participants' idiographic experiences held for them. The interpretative phenomenological analytical approach made it possible for the thematic analysis of the data. Four major findings emerged from the theme in line with the objectives set for the study namely: Firstly, the study revealed that users and centre coordinators of the CIC in Ga East Municipality were likely to approach the use of the facilities differently because both held varied perceptions about the nature of programme offered at the centre. Secondly, the fact that the centre over-relied on foreign technology without modifications to suit the ICT needs of the beneficiaries may have affected an all-inclusive participation of the beneficiaries of the CIC programme in Ga East Municipality. Thirdly the centre programme also lacked local content which affected the participation of majority of the local stakeholders in Ga East. Finally, many beneficiaries of the centre lacked access to the programme of the centre. The study therefore concluded based on these findings that the centre may have not been functioning properly as a result of the following challenges: lack of accessibility of the programme to the beneficiaries of the centre, inappropriate technology and programme of the centre and the lack of participation of local stakeholders in the implementation of the programme of the centre.

Based on these findings the following recommendations were made including: conducting an assessment of ICT needs of the communities in Ga East, adapting the technologies procured for the centre and design suitable programmes to help address ICT needs of beneficiaries. The study also recommended to the management of the Ga East CIC to extend its collaboration efforts to private companies and civil society organizations providing these services and partner with them in the area of capacity building, logistics and operation.

CHAPTER ONE

INTRODUCTION

1.1 Background

Over the last three decades or so, the world seems to have witnessed tremendous growth in technology creating a new global knowledge driven by Information and Communication Technologies (ICTs) (Boateng, 2012). Countries all over the world recognize the fact that ICT has a wide range of potential, this is apparent in the way it has been exploited and applied in almost every aspect of human life including governance, economics, agriculture and most particularly education (Gomez, Hunt, & Lamoreux, 1999). According to Boateng, (2012), academic digitization programmes have recently increased sharply in Africa giving rise to an astronomical growth in online higher education enrolment and rapid adoption of self-paced e-learning, making the continent one of the most dynamic e-learning markets in the world. Among the numerous opportunities created by e-learning are administrative opportunities, instructional opportunities, infrastructural opportunities, business services opportunities and student-centred opportunities (Boateng, 2012). Awotwi and Owusu (2010), have indicated that ICTs have revamped the role of extension services in providing information, education and decision-making assistance to agricultural producers.

Recent trends appear to suggest that access to information has been greatly enhanced through ICTs, creating opportunities like never before for the youth and adults to acquire knowledge and skills that make possible continuous learning over their lifetime and improvement in their living condition (Boateng, 2012). Therefore ICTs which include radio and television as well as newer digital technologies such as computers and the internet, have the potential to increase access to learning by helping to overcome barriers such as those of cost, time and space (Boateng, 2012). Thus, ICT has the potential to enhance education generally and in particularly Non-formal Education (NFE) and Life Long Learning (LLL). The European

Union Memorandum on Lifelong Learning highlighted the crucial role of ICT for active citizenship and employability in the 21st century (Sey & Fellows, 2009). Furthermore, the context of globalization and the emergent „knowledge society“, is creating increasing demand for continuing education and growing awareness of lifelong learning especially in Africa (Boateng, 2012).

As governments in nearly all countries are putting in place mechanism to deliver more of their services over the internet (e-Governance), their private sectors are equally making better use of the ICTs to communicate with their customers as well as suppliers (e-commerce), and digital technology will become not just more sophisticated, but cheaper and easier to use (Sam, 2013). The introduction of e-governance and e-commerce could impact greatly on the lives of people in both urban and rural communities. ICTs are increasingly explored and deployed to facilitate learning and create a knowledge society for citizens to acquire the requisite knowledge and competence aimed at ensuring an accelerated national development, especially in the rural and disadvantaged communities (Sey & Fellows, 2009). These trends suggest individuals and communities would need to use information and communication technologies to learn, solve their problems and enrich their lives.

Over the last three decades, Community Information Centres (CICs) have become the most prevalent initiative in developing countries of Africa (Oppong-Tawiah, 2010). There is no doubt that, the current global economic society in which we live necessitates intensive use of ICT to accelerate national development. The Government of Ghana is not only determined to exploit ICTs for the social and economic benefits of its citizens but also to ensure that, the benefits of ICTs are spread across the country to facilitate accelerated national development (Dzidonu, 2003). Successive governments in Ghana embarked on the development of ICT in efforts to move Ghana towards a knowledge-based society. Several initiatives to accelerate ICT development in Ghana have been rolled out. Key among these initiatives includes

adoption of a Ghana-National ICT for Accelerated Development Policy (G-NICT4D) in 2003 and the building of a national fibre optic network (Dzidonu, 2003). These projects are targeted at rapid deployment of the national ICT infrastructure, establishment of the institutional and regulatory system for effective management of ICT sector. This would promote the use of ICT in all sectors of the economy. Some of the initiatives to promote ICT for Development include: implementation of e-governance by deploying ICT infrastructure in all government institutions, building a National data centre to consolidate data needed for decision making by the government, building regional innovation centres to promote ICT, and ensuring access to ICT at all levels of society (Ministry of Communication, 2004, Ghana Statistical Service, 2012). The contribution of ICT to gross domestic product increased from 2.3% in 2009 to 10.5% in 2011 and the industry created 3,500 additional jobs in 2011 compared to 3,050 in 2010 (National Development Planning Commission, 2011). These figures (10,5% Gross Domestic Product in 2011 and 3500 jobs in 2011), though when compared to the regional average in Africa or worldwide is low, it appears to show a promising upward growth rate of ICTs contribution to Gross Demestic Product in the not too distant future.

The government of Ghana in collaboration with the United Nations Development Programme (UNDP) and the Indian government, launched the first batch of Community Information Centres (CICs) throughout the country in 2005 (Ghana Integrated Fund for Electronic Communication, 2013). The CICs is a hybrid model working as a non-profit community resource centre and for-profit telecentres. The CICs are to provide ICTs access to underprivileged communities with the hope of empowering inhabitants of marginalized communities in Ghana (Ghana Integrated Fund for Electronic Communication, 2013). CICs serve as ICTs access point and support economic activities in the rural areas by providing information to users. The CICs therefore serve as strategic foundation for building an

integrated ICT for national development. The centres create ICT awareness in communities, provide ICT training to build the human resource capacities of communities and promote all e-governance projects of the Government of Ghana through partnership with Metropolitan, Municipal and District Assemblies (MMDAs) (Abissath, 2007). A fully operational CIC should have the following: the physical building itself with electricity and telephone facilities; a Local Area Network (LAN) with at least five (5) workstations usually supplied by the country office of the UNDP; one server; one switch; one printer; one scanner and five (5) UPSs (Uninterruptible Power Sources). (Akakpo, 2008; UNDP, 2009).

According to the Ministry of Communication, (2004) the Community Information Centres (CICs) concept in Ghana was introduced to create access to ICT infrastructure to promote ICT enabled applications and timely available information that will promote operational efficiencies and deliver government services to the rural sectors of the country. The main goals of the CICs in Ghana are to provide community development information and business services to remote communities. Community Information Centres (CICs) offer access to: Internet enabled computers, software based on the local information needs, Fax machines, Printers, Copiers, Telephones, Television and Radios (MOC, 2004). In addition there is adjoining library with books and daily newspapers and magazines. These centres are connected at their remote locations via satellite to the Ghana-India Kofi Annan Centre of Excellence in ICT to facilitate system management. The centres are further linked to the government portal at the Information Services Department of the Ministry of Information to facilitate government to citizen (G2C) interaction. It was stated in the MOC, (2004) that when the district portals are created, CIC's will further be linked to the respective district portals for the promotion of on-line communication and services. CIC's will therefore form an integral part of Ghana's e-government structure.

The success of CICs is key to the process of deploying ICT for accelerated national development. However, a critical study of literature on ICT projects indicated a different story about the goals for which they were established. Most of these centres have either collapsed or underutilized, for instance the CIC in Sekesua in the Upper Manya District of the Eastern Region of Ghana collapse, also the centre in Ada East in the greater Accra District, another centre in the Boku East District of the Upper East Region (Sey & Fellows, 2009). Sey and Fellows (2009), in an elaborate study concluded that, public access centres implemented with pro-poor agenda in the Upper East Region of Ghana for instance were underutilized. These studies on CICs only focused on what could be called supply driven challenges (i.e. CICs implementation challenge that exist as a result of lack of supply of ICT infrastructure, technical and administrative skills and funding) [UNDP Report, 2009].

However CIC implementation goes beyond these challenges. A study conducted in India reported that, effective and relevant service delivery system is a key challenge to the success and sustainability of CICs in rural and marginalized communities in northern part of India (USAID, 2008). Oppong-Tawiah (2010), stated that, ICTs are not an end in themselves but a means to an end. He explained that ICT is an enabler and if not appropriately applied for socio-economic benefits, its mere deployment or wide distribution is of very little relevance in any country, especially in developing countries. In Ghana, the establishment of CICs has been seen as a technology-based project where computers are located in order to satisfy a communication need of community people, however, there are no guideline for implementers to understand the community and its needs and to design products and services that promote social and economic development (Oppong-Tawiah & Boateng, 2011).

A study on rural access to ICT in Ghana has revealed that, rural and underserved communities in Ghana are deprived of access to computer and internet (Akakpo 2008). The study further revealed that the absence of meaningful economic activity and skilled personnel

make these locations unattractive for investors. Rural and underserved communities therefore, generally have limited or no access to ICTs and the average villager cannot afford the cost of a personal computer (Akakpo 2008).

A scan through the literature on CICs in Ghana including: Sam, (2013), Alemna and Sam, (2006), Heeks (2002) e.t.c. shows a lack of adequate framework or model to guide the services that these centres provide. CIC managers appear to have no understanding of the needs of the communities they serve neither do they know how programmes can be designed to meet the needs of these communities (Sey and Fellows, 2009, Oppong-Tawiah, 2010). This knowledge gap can be addressed by conducting research to ascertain the needs of the community people and finding out how to design CIC programmes to address these needs.

1.2 Research Context

The Ga East Municipal Assembly is one of the Sixteen (16) Districts in the Greater Accra Region, located at the northern part of Accra with a population size of 147,742. The Municipality shares boundaries with the Akwapim South District to the north, Accra Metropolitan to the south, the La-Kwantanang Municipality to the east and the Ga West Municipality to the west. The municipality's large towns are: Haatso, Dome, Taifa and Kwabenya (PHC Report, 2010). There are many ethnic groups in the Municipality including: Ga, Ewe, Akans and Mole Dagbani. The Akans seem to have a slight majority over Gas and Ewes in that order however in the rural and peri-urban communities like Abokobi, the Ga form an overwhelming majority though other ethnic groups continue to reside amongst them. The most dominant religion in the Municipality is Christianity though there is an Islamic presence especially in and around Abgogba. Some of the people maintain they are traditionalists (PHC, 2010).

The Ga East Municipality is underserved in terms of ICT access and internet coverage. Many of the schools lack libraries, ICT resource centres and recreational grounds. The Municipality is divided into four sub-municipals for the delivery of health care services. These sub-municipals include Abokobi, Dome, Taifa and Haatso. Each sub-municipal health management team has the responsibility for the delivery of health services to the population of their defined areas, and has either one or two community clinics. Malaria continues to be the major cause of Out-Patients Department (OPD) attendance. It accounts for about 40.8% of illnesses. Frequent outbreaks of cholera in the Municipality are also of great concern (PHC 2010).

The Ga East Municipality is one of the most vibrant commercial centres in Accra. There are four main economic activities in the Municipality, which are agriculture, industry, service and commerce. The Agricultural sector is dominated with crop and livestock farming. A large number of rural populations rely on agriculture as their main source of livelihood with many of them being small holder farmers. Among the wide range of vegetables produced are garden eggs, cabbage, okra, tomatoes and pepper (PHC 2010).

1.3 Statement of the Problem

Many developed countries such as Canada, United Kingdom, United States of America etc., have successfully exploited ICT for the development of their remote and hard to reach communities (Sey & Fellows, 2009). It appears the same cannot be said about developing countries including Ghana. The country is faced with varied difficulties in its quest to realize the potential of using ICT to implement community information centre programmes. Consequently, successive governments of Ghana have since 2005 invested in the establishment of CICs across the country. Interestingly, while new CICs are being built, the existing ones are rapidly becoming defunct for reasons yet to be empirically established (Sey & Fellows, 2009; Opong-Tawiah, 2010).

The researcher's interest in Ghana's decentralization concept has been a compelling drive to follow recent trends about the nature of the CICs in Ghana. The researcher's personal observations and reading of available literature have clearly indicated that, the CIC programme in Ga East Municipality was in dire need of a strategy to deal with a wide range of challenges affecting its operations and save it from collapse (Ministry of Communication Report, 2004). The underlying factors to this state of affairs are unclear because of the dearth of literature. Therefore a research that would unravel the issues bedeviling the implementation of the programmes in Ga East Municipality is worthwhile as it may bring about efficiency and effectiveness in the delivery of the programmes of the centre in Ga East.

1.4 Objectives of the Study

The main objective of the study was to explore the CIC programme implementation at the Ga East Municipality. Specifically, the research was to

1. Describe the perceptions of both centre coordinators and centre users on the nature of the CIC programme in Ga East Municipality.
2. Explain the sources that informed the construction of the CIC programmes used at the Centre
3. Study the delivery methods used at the Centre.
4. Examined the difficulties encountered in implementing the CIC programme in the Municipality.

1.5 Research Questions

In this research the following questions were explored:

1. How do the Ga East Municipality Community Information Centre coordinators and users perceive the programme of the Centre?

2. What sources informed the construction of the Community Information Centre Programme in the Ga East Municipality?
3. How is the CIC programme delivered at the Ga East Municipality?
4. How do the Centre coordinators and users perceive the challenges confronting the implementation of Community Information Centre programme?

1.6 Delimitation

Using the gap-archetype framework propounded by Heeks (2008) the research unveils the underlining social and cultural factors that impede successful design and implementation of CIC programme in the Ga East Municipality. The research captured the views of stakeholders on the social, economic, political and cultural factors that affect programme design, content, methods and service delivery of CIC in Ga East. The study does not include the process involve in the establishment of CIC and challenges related to its establishment.

1.7 Significance of the Study

Community Information Centres (CICs) as indicated earlier is to serve as the pivot around which communities especially underserved and unreached communities are to witness technological transformation. Analysing the current and future trends, CICs are serving as resource and learning centres enabling community people to leverage the potential of ICT for continuous learning over their lifetime and bring about change leading to improved social and economic development. This study is of particular interest in that; lessons learned from it could guide CIC managers how to promote CIC programmes to realize their long-term social and economic sustainability. The study was expected to use theories to help illuminate the challenges facing the successful implementation of the programmes of CIC in Ga East Municipality and contribute to knowledge in the emerging field of ICT deployment for socio-economic development in Africa. The research report therefore provided insight for

academics, policy makers and programme implementers on pertinent issues related to deployment of ICT for accelerated development. The study apart from serving as reference document to academics and the general public will made recommendations for improved CIC programme implementation to guide policy makers and programme implementers in the field of ICT for development.

1.8 Organization of the Study

The study consisted of six chapters which were: Chapter (one) introduction: This basically introduced the topic and stated clearly the statement of the problem, the objectives and how to achieve them. The chapter consisted of the following themes: background, research context, statement of the problem, purpose/objectives, research questions significance and delimitation of the study. Relevant literature was reviewed in chapter (two), followed by chapter (three) which was a detailed outline of the methodology which included the population, sample size and sampling technique, data collection methods and analysis, research instrumentation and ethical issues. Chapter (four) involved the presentation of the results. The last chapter (chapter six) included summary of major findings, conclusions and recommendations.

1.9 Definition of Terms

Two key terminologies in this study need to be defined, they include; information and communication technology (ICT) and community information centre (CIC). ICT as used in this study means, technology that supports activities involving information such as gathering, processing, storing, and presenting data. It also involves communication and collaborative activities. They include: computer, mobile phones, radio and television as well as the internet (Ameriles et al., 2006).

CIC is defined here as a public space where community members have shared public access to ICT and use it to implement social development programs, support the social and personal development of the individuals, communities and contribute to improving the quality of life of community people (Heeks, 2002).

1.10 Chapter Summary

This chapter discussed the background of the study. The chapter subsequently explained the context of the study and stated the problem. Additionally, the chapter stated the research questions, the purpose of the study, objectives of the study and significance of the study. The chapter also provided definition of key terms used in the study. The next chapter focused on the discussion of relevant literature.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviewed related literature according to the following outline:

- Evolution of CICs in the developing world
- Importance and role of CICs in development
- Nature of CIC Programmes and Implementation Strategy in developing countries
- Current issues on sustainability of CICs
- Impact of CIC on Socio-economic Development
- Challenges confronting the implementation of CICs programmes
- Theoretical and conceptual framework of the study.

2.2 Evolution of CIC in the Developing World

ICT was believed to have an immense potential for improving socioeconomic development of countries (Akakpo, 2008). The potential of ICT was acknowledged globally during the World War II when countries across the world were faced with what development experts described as global socio-economic crises. However, the link between ICT and development became strategically significant, with a 1958 declaration of the UN General Assembly calling for an action to build up press, radio broadcasting, and film and television facilities in countries to communicate development messages among the masses (Schramm, 1964 cited in ITU, 1998). Governments across the world placed a high priority on economic growth and social development. One of the key ingredients to achieving such development was the use of ICTs (i.e. radio and other mass media) to convey the information and motivation needed for widespread behaviour change to promote socio-economic development (Papa. et al, 2015).

The application of ICTs in development grew consistently with the growth of new innovative technologies. With the advent of these technologies (computers and internet) Sweden established its first Community Information Centre in 1958 which used ICTs such as the computer and internet to promote socio-economic development. Soon after, the concept of CICs rapidly spread to other European countries, notably Scandinavia, Germany and the United Kingdom (ITU, 1998). CICs were established basically to provide access to ICTs to accelerate development in remote and hard to reach communities. CICs were by then known as Telecottages in Sweden, Electronic Village Halls in Denmark, and Community Technology Centres in the United States America, Australia and Canada (Harris, 2004).

In the late 1980s, stakeholders in the developing countries including: international development agencies, civil society organisations, the academia and development experts began to search for a new economic model to replace the existing development models that have failed to deliver development to third world countries especially countries in Africa (Heeks, 2008). There was a search for a model that would solve the increasing development gap between developed countries and third world countries. The development paradigms that were applied in the developing world before 1980 can be categorised into three main development models, namely; the economic paradigm, the structural paradigm and the cultural paradigm.

The proponents of the economic paradigm argue that poverty in the developing world is as a result of the lack of sound fiscal policy by governments and therefore International Monetary Fund and its affiliates often recommend some fiscal and/or monetary policies targeted at achieving socio-economic development (Sam, 2013). The second model is the structural paradigm which states that poverty is caused by the functions of the social structure in the developing world (Sam, 2013). The main advocates of this view believed that the only way to combat poverty is to change the so-called system of government. The third model which is

the cultural paradigm; states that poverty is caused by the culture and social values of the people as exemplified in Singapore, Taiwan and Korea which were developed based on the Confucian ethics (Asenso, Okyere & Mekonnen, 2012; Heeks, 2009; Sam, 2013).

Having applied the economic model of development, the structural and the cultural models to alleviate poverty between the 1960s to the early 90s, the technological approach became dominant following the advancement in technology which had an immense potential for socio-economic development especially in remote and underserved communities (Heeks & Kenny, 2002 cited in Sam, 2013). Thus, it was assumed by experts of the technological approach such as Heeks (2009a), and Asenso-Okyere and Mekonnen (2012) that to alleviate poverty and other social problems, the poor must be assisted to use ICTs to improve upon their condition of living. The technological model states that poverty is caused by the lack of ability of the underdeveloped world to take advantage of technology to change their condition of living. According to Asenso-Okyere and Mekonnen, this argument is often used to explain the poverty situation in the underdeveloped world as against their developed counterpart.

After series of conferences and research studies presented at various international forums, it was declared that ICTs had the potential to bridge the socio-economic development gap that existed between the developed and developing world (ITU, 1998). These conferences also led to the introduction of a framework termed as Information and Communication Technology for Development (ICT4D) which was a framework to explore ICT for accelerated national development (ITU, 1998). Subsequently developing countries began to put in place national policies and frameworks that would explore ICT for socio-economic development. These policies are reflected in most of the regional and national policies of countries in developing world (Dzidonu, 2003; Heeks, 2009b). For example, some countries in Asia including India, Singapore, Malaysia, Thailand, Sri Lanka, South Korea and Vietnam, and others in South American such as Brazil, Chile, and Mexico and some African countries such as Rwanda,

Senegal, Mozambique, South Africa, Ghana and Nigeria had seriously taken on board the deployment and exploitation of ICTs to facilitate their socio-economic development of their nation (Asenso, Okyere & Mekonnen, 2012; Dzidonu, 2002; Heeks, 2009a).

Garrido, et al, (2012) reported other events that set the pace for the application of ICT in development included the creation by the G8 countries of the Digital Opportunities Task Force in 2000 that set the agenda for action to be taken on Information Communication for Development. Also the organisation of the World Summits on the Information Society (WSIS) held in 2003 in Geneva and 2005 in Tunis, these platforms acted as key learning and policy formulation points along the Information Communication for Development path.

A host of projects flowing from Information and Communication Technology for Development (ICT4D) were launched from InforCauca in Colombia to Community Learning and Information Centres (CLICs) in Mali (Abassath, 2005), from Gyandoot in India, Community Information Centre (CIC), in Ghana and Nigeria and Village Knowledge Centres in Kenya, to mention but a few (Dzidonu, 2002). All of these projects were part of the strategies developed to bridge the digital divide between developed and developing countries (MOC, 2004). As far back in 2003, the India Government launched policies and programmes to deploy ICT for national development especially in rural communities (Roman, 2003).

2.3 Importance and Role of CICs in Development

The potential of CICs cannot be overemphasized as they provide rural and underserved communities with opportunities to access ICTs and enhance their social and economic conditions. According to Parkinson (2005), CICs are specifically built premise to provide ICT literacy, information, and knowledge to the rural population. Amariles, Paz, Russell, Johnson., (2006) defined CICs as public spaces where community members have shared public access to ICT and use it to implement social development programmes, support the

social and personal development of the individuals and contribute to improving the quality of life of community people. CICs therefore are systems that enable individuals and communities to use ICT to explore, design, develop programmes and services that will enhance their social, economic, educational and cultural conditions.

Harris, (2004) also explained that CICs can increase access to information, knowledge sharing and help achieve social development outcomes such as increased access to education healthcare and, better civic dialogue and citizen participation in social development processes. This view was established in the research conducted by Gomez, et al., (1999). Garrison, et al., (2012) have also stated that, CICs have the potentials to provide services in the area of socio-economic services including: financial service, trade and commerce, agricultural market price, entertainment service and social capital, public services. They also promote civic engagement and e-governance.

The role of CICs in the socio-economic development of a nation cannot be overemphasized. For instance in the delivery of education and training, CICs can be used to facilitate tele-learning or distance education, training in ICTs, video conferencing, and internet libraries (Oestmann & Dymond, 2001). Gomez, et al., (1999) maintained that CICs deliver educational information to the community by providing access to databases and receiving and posting information of general interest to local people for example government notices, information on the spread of diseases, weather information, prices of farm products, educational opportunities. CICs also provide educational services such as alternative education and skills training, extension education, community education and promotion of life-long learning (World Bank, 2003, Asenso-Okyere & Mekonnen, 2012). The literature reviewed in this study has established the fact that CICs provide students and the public new sources of information, and provide an opportunity for students in particular to use innovative

tools for doing research, do school assignments and to facilitate the learning process with the help of trainers/facilitators.

In Rwanda CICs have played a significant role in education. According to Karara (2010:1), “CICs offered a certificate in International Certified Driving Licence, an internationally acknowledged IT certificate, making their graduates capable of competing both in the county, region and beyond”. In India also, studies has revealed that CIC applications have played an important role and have provided job and income opportunities, access to markets, information related to economic activities, and a range of citizen services (Oestmann & Dymond, 2001).

According to Greensberg, (2005) CICs empower people as they allow information to be transferred by distance without face-to-face thus, they reduce cost, risk and time. In this same direction Harris (2004) mentioned twelve different poverty alleviation strategies that use CICs for their successful implementation, including: disseminating locally relevant information, targeting disadvantaged and marginalized groups, promoting local entrepreneurship, improving poor people’s health, strengthening education and promoting trade and commerce. Additionally, CICs are some of the strategies that use ICTs to alleviate poverty by supporting good governance, building capacity and capability, enriching culture, creating and reinforcing social mobilization e.t.c. (Harris, 2004). These facts show that CICs offer numerous benefits that can improve the living conditions of individuals, communities and the nation as a whole.

Governments across the world, international development agencies including civil society organisations, the academia and development experts have long recognised the immense potential that ICT offered in bridging the development gap (digital divide) between the developed countries and the developing countries. Efforts made to bridge this gap (digital

divide) begun in a number of national communication policies of developing countries as well as the programmes of international development agencies. These efforts sought to harness the prospect of information and communication technologies (ICTs) for the transformation of national economies (Singh, 1999) as cited by Sey (2008). At the International Telecommunication Union conference in Malta 1998, representatives of governments across the world declared that “new technologies have a significant impact on the expansion of telecommunication and have the potential to close the development gap between urban and rural communities” (ITU, 1998; p14). In Finland, Government policies and programmes were far advanced in the process of deploying ICT for national development especially in rural communities (Roman, 2003). India just like Ghana regards the integration of ICTs in its economy as a key tool to facilitate and improve the quality of life, knowledge and international competitiveness of both urban and rural communities (Rose, 1999). Malaysia’s vision of transforming the country into an „Intelligent Island“ by using ICTs as the main engine for promoting accelerated development and growth in all parts of the country (Suchman, 2007).

It is without doubt that countries all over the world recognise the role of ICT as crucial in accelerating national development. Literature reviewed under this section showed that CICs have great potential and have contributed significantly towards accelerated national development especially in the developed world.

While the developed world have tapped in to ICT to accelerate development in their remote and underserved communities, developing countries specifically in Africa have yet to benefit from their investment in these technologies. It is therefore crucial to examine the nature of programme and the implementation strategies used in implementing CICs in developing countries specifically in Africa (Heeks, 2008).

It is worthy of note at this juncture that the potential of ICT to socio-economic development is without a doubt globally acknowledged however different countries and different stakeholders had diverse opinion on the extent to which ICT can be exploited for socio-economic development and this influenced the kinds of investment they made in ICT and the way they applied it for socio-economic development.

2.4 Nature of CIC Programmes and Implementation Strategy in developing countries

There is a wide diversity of CIC programmes and services, and the range is steadily increasing. The range of services that was offered by the community libraries and community information centres in the early days of 1980s was quite limited. With the advent of new technologies, information and communication technology (ICT) was put to many different uses and, as a consequence, community centres are able to offer many different services (Hunt 2001).

Community Information Centres (CICs) known by its varied names including: “Telecentres”, “Community IT Centres”, “Multi-Purpose Tele-Centres” had its origins in the mid-1980s in Scandinavia, primarily as a means to bridge the digital divide between the urban and rural areas (Scharffenberger, 1999). The emergence of new technologies between the 1980s to the 2000, had giving these centres the capacity to play roles beyond that of increasing access to ICT; for instance the development of the internet and other software, had greatly extended the range of activities that could be undertaken by CICs. Depending on the community needs and technologies available, the centres begun to provide varied programmes in the area of education and skills training, agriculture, health, governance and economics (Roman, 2003).

The first CIC that emerged outside of the developed world was in the form of Community Libraries (CL) in the early 80s. The services provided by these centres (CL) were; processing, storing and disseminating information (UNESCO, 2006). In terms of their operations and

institutional process, the literature reviewed showed that they were basically guided by community asset-based theory. According to Garrido, Sey, Hart and Santana, (2012) asset-based theory is a sustainable approach towards programme/project implementation in which programme/project implementers rely on local resources. They relied on the existing community resources in the establishment and sustenance of CIC initiatives (Smith, 1992). In some cases the electronic communication system were built within the existing library systems and in other cases the libraries were attached to electronic communication systems (Montealegre, 1999). In either ways the centres performed the functions of receiving, storing and disseminating information. This type of CICs can be found in Peru and Ethiopia. It is interesting to note also that the University of Ghana has adopted a similar model at Balme Library with the creation of Research Commons and Knowledge Commons.

The growing importance of information and communication technology in the late 1980s lead to the emergence of “Telecentres” and “community IT centres”. The technology, however, was mainly analogue, consisting of fax machines, telephones, photocopiers, duplicators and printers (O’Neil, 2002). Many communities needed these basic resources, and consistent efforts were made towards the establishment of resource centres in disadvantaged urban and rural communities (Roman & Colle, 2005). The centres established at the time provided IT-handling skills, particularly among community people. The main service provided by Community IT are digital literacy services including; ICT training on both basic and advance courses in computing (Harris, Kumar, & Balaji, 2003).

Another model that emerged in the late 1990s was the Multipurpose Community Information Centres (MCICs). The emergence of this type of CIC was a new way of using the emerging ICT, particularly the growth of the internet to engage in wide range of activities; services provided by MCICs extended to include education, economics, skills training and agro-business and agricultural education. The idea was advocated strongly by the International

Telecommunications Union. It is now widespread in South America, Africa, and the Asia-Pacific region, as well as in more developed European and North American countries. The primary goal was to provide these communities access to the use of ICT for a wide range of purposes, not just as a means of disseminating information, processing and storing information (Proenza, Bastidas-Buch, & Montero, 2002). The MCICs targeted specific groups within the community, such as women, farmers and youths (ITU, 2012). The MCIC provides services including education/training, community participation, agricultural business and extension education, labour markets, health services, social services, social networks, facilitated by use of ICTs. MCICs support livelihoods in a variety of ways; providing access to information, computer skills development, access to government and other social services, access to business-related training, and provision of business enterprise services (Garrido et al., 2012). The MCICs are largely initiated by community-based organizations and supported by a wide range of national, regional and local government agencies, along with sponsorship from private sector companies and charitable donations. One such centre in Ban Samkha Lampang Province in Thailand (UNESCO, 2006).

Over the last decades, the growth of the internet and the transition to information and knowledge-based societies, have made people and communities to become aware of the importance of learning and knowledge as a basis for individual and/community, economic and social development. Community Information and Learning Centres (CILCs) have emerged as new strategies to bridge the development gap between the haves and have-nots. A number of community learning centres have been established with the specific purpose of providing a variety of learning opportunities that can empower underprivileged people within a community and improve their quality of life (Sey & Fellows, 2009). While these centres are mainly concerned with education, they have some characteristics in common with the other centres that were discussed earlier; to provide access for people to use ICT to enhance their

condition of living. CILC services can be categorized under the following: Government to Citizenship Engagement; Youth Development Services; Lifelong Learning and Education.

Youth Development Services; CILCs provide space for youths to develop knowledge, skills and attitude; they provide youths with physical development; intellectual development (including life skills, vocational skills), psychological and emotional development; and social development (Heeks, 2002).

Government to Citizenship Engagement; the notion that government to citizen relationships can be connected within a range of public and private intermediary has become central to information age policies (Heeks, 2009b). Consistent with this, CILCs is serving as intermediaries in the process of increasing the democratic participation of the people they serve. The democratic and participatory approach to communication assumes that innovations such as e-government and CILCs will have positive effects on democratic development (Heeks & Kenny, 2002). People are expected to have more information about political life in order to take more responsible decisions and engage in democratic behaviour.

Lifelong Learning and Education; CILC also provides opportunity for lifelong learning and education. Lifelong learning refers to empowerment through improvement of knowledge, skills and competences, or for improving the different aspect of a person's life. Ultimately, lifelong learning discourses have acknowledged the fact that ICT4D initiatives are Internet-facilitated spaces for empowerment and life-long learning (Heeks & Kenny, 2002).

It can be gleaned from above that, four main models of CICs have been adopted mostly from the developed world and used as strategies for the implementation of CICs in developing countries specifically in rural and underserved communities in Asia, and Africa. These centres include the CLs, Community IT Centres, MCICs and CILCs. Based on the development approach of a country and other contextual factors, a particular model of CIC

was adopted for that country. Countries that adopted the CL and Community IT Centre mostly operate on the technological approach which is based on the assumption that poverty will be alleviated if poor people acquire the skills and know-how of ICT and apply it in their life. MCICs operate mainly on the economic development approach with the assumption that ICT has the capacity to increase production through efficient and effective production, distribution, consumption of goods and service. Hence ICTs when applied in agricultural sector, trade, commerce, and health delivery will lead to efficiency, effectiveness and higher productivity which will lead to higher income and better conditions of living. Most of the CILCs operate mainly on the cultural approach to development. Their focus is to use the power of ICT to promote learning and education through the acquisition of knowledge, skills and attitudes that will cause a change in behaviour.

The nature of programmes offered by a CIC depends on the type of CIC model used which is influenced by the development approach of the implementers of the CIC programme. It must be acknowledged here that the operations and programmes of each of these centres may overlap within the various development approaches. A CIC model may provide programmes based on the technological, economic, structural or cultural approaches depending on the circumstance of the implementation context. In fact there are ICT interventions for all of the four development approaches as stated by Flor, (2001). The critical issue to look at is how do these centres functioned to achieve the goal for which they have been set up and how sustainable have these ICT initiatives.

Heeks, (2008) described three development approaches of how CICs design and implement their programmes. He summarized them as laboratory (pro-poor), collaborative (Para-poor), and grassroots (per-poor). "Laboratory" (pro-poor) innovations are CICs that are designed outside of underdeveloped communities but on behalf of the communities. Community IT Centres were designed this way. This can be an effective approach for engaging resources

from the global North and applying it to developing country's problems. However, it runs into what Heeks describes as the danger of "design-reality gaps"; a mismatch between the assumptions and requirements built into the design, and the on-the-ground realities of poor communities. When there's a large design-reality gap, the outcome is most likely to be a failure hence, the widespread lack of success and sustainability reported for these projects. "Collaborative" (Para-poor) innovation is the CIC established working alongside poor communities. The need for participative, user-engaged design processes was a key learning point in CIC initiatives. The MCIC applied this approach by allowing locals to participate in the development of programmes. "Grassroots" (per-poor) innovation is innovation by and within poor communities. This was hardly a possibility in the 1990s, as a result of the nature of technology at the time, there was insufficient contact between poor users and the new technologies (radio and TV). But this has changed in the last few years as mobiles, Personal Computers (PCs) and the Web arrived. The poor have themselves become innovators; not in the traditional laboratory research and design sense of the term but in the sense of adapting and applying the technology in new ways (Sam, 2013).

CICs may differ in terms of ownership, programmes/services and operational models; nonetheless, they all serve the purpose of providing access to ICT in the rural and underserved communities and to help bridge the poverty gap. The literature also showed that these centres used different theories, operational models in the delivery of their programmes and services. These theories and operational models are designed to suit the nature of services and other environmental factors existing within the communities where the centres operate. It is interesting to note that these centres have evolved over the years to meet the needs of the communities they serve within the changing environment and the advancement in technology. The critical question at this moment is what has been the outcome of the above

strategies? This question is invariably linked with the impact and sustainability of CICs which would be discussed in subsequent sections.

2.5 Current Issues on Sustainability of CICs

In the last decade, CIC sustainability has emerged as a matter of interest in the development discourse (Mutala, 2005). Sustainability can be described as „the ability of a project or intervention to continue in existence after the implementing agency has departed“ (Harris, 2004). The key issue that CIC researchers are confronted with is how to address stakeholder needs in order to achieve sustainable CICs in developing contexts.

The barriers to CICs sustainability have been discussed in the literature reviewed in this study (Kumar and Best, 2006; Roman and Colle, 2002; Benjamin, 2001; Hudson, 2001a; Whyte, 2000). These discussions can be categorized into three main issues; financial and/or economic sustainability, political sustainability and social sustainability (Bailur, 2007b). The Literature reviewed on the topic tends to focus more on the financial and political issues affecting the sustainability of CICs. However this study focuses more on the social issues affecting CIC sustainability. It has to be pointed out at this juncture that the financial and political issues affecting CIC sustainability are crucial, with important interrelationships which affect them (Colle, 2005; Whyte, 2000).

The literature tends to focus more on organizational issues than social issues related to CICs (Kumar and Best, 2006; Ellen, 2003). Madon, (2005) postulated that while there are many factors that impact CIC sustainability, many of them are associated with finance and infrastructure issues. Ellen, (2003) however argued that more of factors affecting sustainability have to do with the implementation of CIC services to the communities. She stated that there has been limited investigation of the stakeholders“ perspectives on what CICs are being used for (Ellen, 2003). Social sustainability of CICs remains one of the key

issues facing digital inclusion projects over the last decade, (Mayanja, 2006). One of the key factors affecting the social sustainability of CIC, is the capacity of CICs to recognize and address emerging needs of the communities (McConnell, 2001). Having recognized this fact Harris and Rajora (2006) argue that community acceptance is essential to overall CIC sustainability. They recommended that CIC staff may need to assume a role in community development activities in order to achieve social sustainability (Harris and Rajora, 2006; Madon, 2005). Additionally, the challenges associated with achieving a balance between financial and social sustainability needs further empirical study to investigate factors which facilitate these aspects of CIC operations (Kuriyan, Toyama & Ray, 2006). In discussing the role of CICs in bridging the digital divide, Rogers and Shukla (2001), noted that once the digital divide related to access to ICT has been bridged, it may become necessary to focus on other areas, such as the gaps with respect to learning and accessible content. The implementation of CIC programmes across the country (Ghana) was as is still today an effort to make CICs services accessible to all especially remote and underserved communities including the CIC in Ga East Municipality. It is therefore important to critically examine the programme of the centre in relation to the needs of the people of Ga East Municipality.

Hudson (2001b) noted the evolving nature of CICs in his work when he provided the range of community needs that CICs are expected to address and suggested constant study of these trends. According to Roman, (2003) research is needed to examine the diffusion of CIC services. Kuriyan, Toyama & Ray, (2006) suggest that there should be further empirical research to explain the link between services provided by rural community access points (such as computer literacy) and social development. There have been a limited number of studies that have investigated the social impacts of CICs in communities (Kumar and Best, 2006). While CICs provide a key location and opportunities for community development, their continued impact and influence is dependent on how the issues of social sustainability

are approached (Mayanja, 2006). Based on the literature, which highlights social sustainability as a key component of overall telecentre sustainability, it is useful to investigate the challenges to this type of sustainability from the perspectives of different telecentre stakeholders.

2.6 Impact of CIC on Socio-economic Development

There are mixed reports on the impact of CIC initiatives. For example in India, the adoption and use of ICTs in rural areas bridged the digital divide between the North East and the rest of the country and also brought about increases in income levels of CIC patrons (Chaudhri & Dash, 2007). There are equally many other studies that have come out with reports indicating successful outcomes of CICs projects (Flor, 2001; Sey, 2008 & Sam, 2013). Krishna and Walsham (2005), in contrast reported that there are more failures than success stories. Heeks and Kenny (2002), argued in the same direction that, ICTs have little value to the developing world. They said that the harmful effects of the technologies far outweigh any benefits to be derived from the technologies.

Braun and Torero (2006), observed that, the different opinions about ICTs reveal that the role of CICs in development is unclear, especially without convincing evidence of their impact and most of these centres do not last enough for any significant impact to be achieved. In the view of Harindranath and Sein (2007), ICTs are widely accepted to have an important role in national development, but the nature of the link between the two remains unclear. However Sam (2013), in his study that investigated the use of Information and Communication Technology for poverty alleviation in rural communities in the central region of Ghana, established that there was a relationship between ICT access and use on one hand and poverty alleviation and sustainable livelihoods on the other hand. One of the conclusions from his findings was that, ICTs are one of the ingredients in poverty alleviation and sustainable livelihoods. Other studies that have also supported the stance of Sam include: ICTs and

empowerment of women (Kwapong, 2008), mobile phones and sustainable livelihoods (Sey, 2008), mobile phones and micro and small business development (Frempong, Essegbey & Tetteh, 2007), adoption of ICTs by women food producers (Sarpong, Egyir & Osei-Asare, 2007) and ICTs and rural development (Boateng, 2012).

According to Obayelu & Ugunlade (2006), information and knowledge are critical components of poverty alleviation; hence the potential of ICTs to transmit these assets to the poor is a great relief in poverty reduction efforts. Deregulation of telecommunication industry in Nigeria has provided the opportunity to use ICTs including CICs to communicate information on agricultural price market, technology and weather to poor farmers participating in cassava and rice initiatives. ICTs have also been used in health service delivery (telemedicine), employment generation, micro-enterprise promotion and participatory governance (Obayelu & Ogunlade, 2006). For any significant impact to be achieved effective measures must be put in place to ensure sustainable implementation of CIC programmes. To this end CICs must ensure the following: effective leadership and administrative structure, high level of technical skills of staff through constant training and retraining, adequate funds and logistics and research and local participation including the target beneficiaries (UNDP, 2009; Opong-Tawiah, 2010; Sey & Fellows, 2008).

2.7 Challenges Confronting the Implementation of CICs

In spite of the innovative means by which ICTs are put to use and the successful outcomes as established in some literature, it is a home truth that, significant amount of resource injected in many CIC initiatives in Africa have not yielded the expected outcome (Obayelu & Ugunlade, 2006). This leads to the challenges facing CIC programmes specifically in Africa. In developing countries of Africa, CICs serve as sources of access to internet and ICT facilities (Sey & Fellows, 2008). The literature acknowledged the fact that infrastructure deficit is a major challenge if CICs will be used to make ICTs accessible in rural areas of

Africa. Most researchers have identified these challenges including: lack of ICT infrastructure, lack of technical and managerial skills, and funding. The establishments of CICs in rural and underserved communities are in part a process of addressing the infrastructure challenges, yet more infrastructure is needed to expand the ICT coverage in rural communities in Africa. There are many rural and remote communities in Africa that lacked internet coverage, and electricity. Existing CICs lacked adequate computers and effective internet service (Frempong, Essegbey & Tetteh, 2007). Sey, (2008) established in a study that many of the staff of CICs have not had any form of training and so lacked the technical and managerial skills needed to maintain and manage the centres. Boateng, (2012), corroborated this view when his study of CICs in the northern regions of Ghana showed that funding was a challenge affecting the operations of the centres.

The literature reviewed under this study showed that studies in Africa specifically Ghana are focused on infrastructure and technical challenges. However, Mutula (2005), in his study of ICT initiatives in sub-Saharan Africa suggested that though there were several technical and infrastructure-related challenges for the widening of ICT access gap, the real concern in these countries lay more with people-related factors that needed sufficient attention. Heeks & Kenny (2002), believed that socio-cultural factors existing in communities where CICs are established affect the operations of the centre. The NammaDhwani project in South India is a case in point. Loud speakers were wired up around the village to broadcast “developmental” information from the community radio. Villagers were not happy about this and, at one point, the wires were cut and speakers linked up to a mobile sound system to broadcast music as a statue of Lord Ganesha was paraded around the village for a local festival. The former use of ICT was seen as one the community needed. The latter was what they wanted. Where projects focus on needs, they can suffer from low usage (and hence low impact), subversion and a lack of sustainability. Some studies conducted in East Africa also point to the fact that

implementation of CICs is affected by factors other than technical and infrastructure related challenges (Sey, 2008, cited in Sam, 2013). Whether or not these factors affect CICs in Ghana is something that deserves more research attention to confirm. There is the need therefore to examine specific challenges on specific aspects of the implementation of CICs in Ghana especially in the rural and underserved communities in the Greater Accra Region.

In a concise statement Heeks, (2008) described these challenges when he said that ICT initiatives in developing countries function exclusively from the understanding of designers of the technology rather than users of these technologies; this creates a design reality gap. He stated further that projects were designed around a standard information needs pattern that said communities needed better access to information on health, education, governance, etc. However, when rural and underserved communities can freely choose from a list of ICT needs, priority items are not often the kind of ICT project prescribed for them. They often may choose services related to new income and employment opportunities, and entertainment (Heeks, 2008). To sustain CIC projects, implementers of the programme need to integrate local views into the technology design. Some of the key causes of failure of ICT4D project can be summarized. These include: very inflexible project implementation process that does not depart from the initial top-down plans, inability to build appropriate knowledge that could help the project, over reliance on external resources and poor project leadership.

Community Information Centres (CICs) do not exist in a vacuum. They are shaped and constrained by the policies of the communities within which they operate and by the policies of the organisations that support them. It would be difficult to sustain a centre for a long time if the aims and objectives were not aligned with the policies of the local community. It is established in the literature reviewed that there was not enough policy that provided a guiding framework for the implementation of CICs in many of the developing countries of Africa and this negatively affect the implementation of CICs in these countries. Many third world

countries in Africa have developed ICT policies which are isolated from the belief systems, aspirations, plans and financial commitments of the communities in which these initiatives are implemented. This has affected the successful implementation and the long term sustainability of these centres (Mukerji, 2008).

Another issue that has not been adequately dealt with in the literature which deserve a research attention is the influence of gender issues in the long term sustainability of these centres. Kwapong, (2008) has looked at gender participation in ICT with focus on mobile phone. While her study was conducted in the Eastern region of Ghana, there is the need to examine the issue of gender participation in the use of ICT in general and its diverse uses in different context.

The literature reviewed in this study has identified numerous challenges affecting the implementation of CICs especially in developing countries. However as to whether these challenges affect the implementation of CICs in Ghana is what so far has not been adequately established. As pointed out earlier, most of the literature on the challenges of implementing CICs are focused on technical challenges, however, the nature of these challenges may differ from one country to another and even from one community to another. It is therefore critical to look at these challenges of CICs in community specific context and bring to light the differences in these contexts. This will bring out the nuances of the challenges of the CICs in these contexts. A few of the studies that have focus on non-technical challenges have not looked at the programmes and services provided by CICs. This is a critical area for study because the nature of CIC programme is key to its adoption as stated clearly by Mayanja, (2006). If the programme meets the needs of its beneficiaries there would be high patronage and higher rate of adoption. However, if the programme does not meet the needs of its beneficiaries there would be lower patronage and lower rate of adoption.

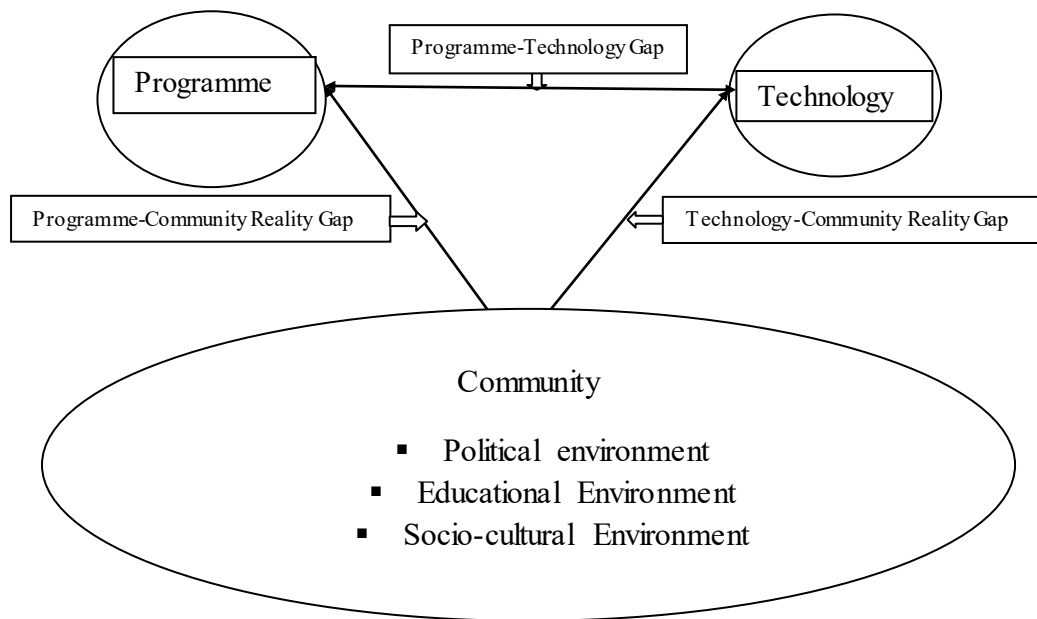
To survive, CICs must be substantially demand-driven and this translates into the need to provide people in the host communities with access to relevant and useful content (Colle, ND). Sam (2013) found in his study in the Central region of Ghana that local content was one of the major factors that determines the adoption of ICTs for sustainable livelihood. However there were more questions to be answered than what the literature provided on the issue of local content. Again, Harris & Rajora (2006) said that the critical elements of successful centres are that they reflect the needs of the communities that they serve. As each community is unique, it follows that it is not sensible to adopt a “one size fits all” approach. It has been established by Sey and Fellows (2008) that the implementation of the CIC initiatives is done in wholesale; they are implemented uniformly across the country without regard to the differences in environmental context. While it can be stated as a fact that this has affected the implementation of CICs in the three northern regions where Sey and Fellows (2008) conducted their study, this situation is yet to be empirically established in the Eastern and Greater Accra regions of the country.

2.8 Theoretical and Conceptual Framework

Heeks (2002), developed the Gap Archetype Theory in which he proposed three categories of design-reality gaps that affect the success of Information and Communication Technology for Development (ICT4D) initiatives: Hard-soft gaps, private-public gaps, and country context gaps. This theory is appropriate for investigating the challenges of community information centre programmes in the Ga East Municipality because it provides a comprehensive framework for the analysis of the key challenges that affect successful implementation of the CIC programme. The framework is also flexible and has been used in a different context in Ghana to conduct similar studies in the Upper East and Northern regions (Sey and Fellows, 2009). According to Heeks (2002) the hard-soft gaps are gaps that show the influence of the social, educational and cultural factors e.t.c. in the community and their

influence on the technology that is applied to serve the needs of the community. The private-public gaps caused by the situation where systems designed for the private sector are transferred and implemented in the public sector without any variation in design to suite the context within which it is applied. The country context gaps exist when an information system designed for a developed country is implemented in a developing country. In a desperate attempt to reap the benefits of technology, systems are adopted from one context and implemented in another without taking necessary steps to ensure that the new system is aligned with contextual factors. A system designed for one context might not necessarily be suitable for another. The fundamental thesis of this framework is that the three variables invariably impede the practical implementation of ICT initiatives in most developing countries. Thus, the capacity of ICTs to fulfil developmental mandates is constrained by their inability to manage these variables successfully. They are seen as obstacles that must be overcome to achieve desired goals.

Figure 1: Adopted Gap Archetype Framework



Source: By researcher

Unlike Heeks's framework which analyses the implementation challenges of ICT initiatives from a macro perspective (i.e. implementation of ICT project on a national scale) this study adopts the gap archetype framework to explore the implementation challenges of the programme of the CIC in the Ga East Municipality. The adopted framework has three variables including the programme/services, the technology and the community context. The programmes and services of CICs can be categorized into community development services, digital and information services, economic development services (MOC, 2004). The technology includes ICT tools that are used at the CIC to provide the above services to the community. They include internet-enabled computers and software, fax machines, printers, photo copiers, radio and TVs. The community context refers to the social, economic, educational and cultural environment.

The Gap Archetype Framework has been used to conduct research in different parts of Ghana and have proven useful for ICT4D research analysis. The gap-archetype framework explains that these variables (programmes, technology and community context) most of the time function in isolation, creating implementation gaps that hinder the successful implementation of CIC programmes. The framework identifies three main gaps that may hamper successful implementation of CIC programmes including the programme-technology gap (gap caused by the difference between the nature of programmes/services offered and the nature of the technology used to offer the service), programme-community context gap (gap existing between the programme/services provided by CICs and the social, economic and cultural realities of the communities they serve), hard-soft gaps (which are gaps caused by the difference between the nature of technology and nature of the community realities). The framework however posits that for a successful implementation of CIC programmes, these gaps would have to be identified and managed effectively and efficiently. The framework

serves as a comprehensive tool to explore the nuances of the implementation challenges of CIC programme in the Ga East Municipality.

The researcher carries the following assumptions into this study:

- That for communities to benefit from a technology, that technology must be seen as a livelihood asset, accepted and incorporated into the institutions and processes within the community.
- That technology must be designed, developed and deployed as part of the livelihood strategies targeted of the community.
- That the inability of CICs implementers to harmonize the technology, programme and community context will create programme implementation gaps, and the wider the gaps the more likely CICs may fail.

2.9 Chapter Summary

The main highlights of this chapter are that: CIC programmes range from digital literacy services to social and economic services, youth development e-governance/civic engagement, and life-long learning. The literature showed that CIC programmes and services vary from one CIC to another and these programmes are developed based on the socio-economic and cultural circumstances of the environment within which these centres operate. The literature reviewed also showed that CIC programmes have evolved to match the changing needs of target population as well as the growing advancement in technology. It was pointed out in the review of literature for this study that the challenges of implementing CICs are not only limited to technical and infrastructure challenges and that one of the biggest challenges CICs faced included social, political, economic and cultural challenges. There is therefore the need to critically examine specific challenges related to CIC programme in Ga East Municipality

and explain the nuances of these challenges. The next chapter is the methodological consideration informing this research.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The previous chapter presented a review of related literature and the theoretical framework of this research study. This chapter discusses the methodological issues underpinning the study based on an interpretative perspective. The areas covered include the research approach and design, participants of the study, research instrument, data collection, analysis and ethical issues concerning the conduct of the research. In this research the following questions were explored:

1. How do Ga East Municipality CIC coordinators and users perceive the centre programme?
2. What sources informed the construction of the Ga East Municipality CIC programme?
3. How is the CIC programme delivered at Ga East Municipality?
4. How do the Centre coordinators and users perceive the challenges confronting the implementation of the CIC programme?

3.2 Research Approach and Design

The study sought to explore the implementation challenges of Community Information Centre Programmes in Ga East Municipality. In doing so, the study adopted a qualitative approach relying on the interpretative phenomenological design. Phenomenology was founded by Edward Husserl (1927). Other key scholars in the field include Martin Heidegger (1927), Jean Paul Sartre (1943) and Maurice Merleau-Ponty (1962). A qualitative phenomenological research describes “one or more individual’s consciousness and experience of a phenomenon...” (Johnson & Christensen, 2008). There are many forms of phenomenology including realistic phenomenology, constitutive phenomenology,

transcendental phenomenology, existential phenomenology, and hermeneutical phenomenology (Johnson & Christensen, 2008). The realistic phenomenology was used in this research. Realistic phenomenology is Husserl's earlier formulation which explores universal as well as unique experiences among research participants.

The Realistic phenomenology was chosen because of the researcher's intention to gain insights into the life-worlds of the participants as well as to understand their personal meanings constructed from their lived experiences as staff and users of the CIC (Johnson & Christensen, 2008). In order to understand the lived experiences from the vantage point of the participants, the researcher deliberately put aside his own beliefs and feelings.

3.3 Participants' Selection

The target population of the study was the CIC programme in the Ga East Municipality. The research focused on the study of youth groups, school children, farmers, women groups, Community Based Organizations and Non-Governmental Organizations which patronised the services of the CIC for their daily and periodic ICT needs such as typing and printing, photocopy, scanning, use of the internet for communication and access to information.

Participants for the study were purposively selected because these participants had the best information required to achieve the objective of the study. Four of the senior staffs of the centre were selected based on their long years of rich experience and four centre users identified by the centre manager as frequent users of the facility were also selected and invited for the FGD. Two community members who were non-users were also identified by the centre manager and invited for the FGD. The participants were categorised into two FGDs labelled FG1 and FG2. Each group comprised of two senior staffs of the centre, two frequent users of the facility and one non-user community member.

Prior to the selection of participants Ga East Municipality was purposively selected because, the Ghana Statistical Service District Analytical Report (2012) indicated that, the district had low ICT penetration rate in the Greater Accra Region. The CIC in Ga East Municipality was established to make ICT accessible to the people within the municipality however the centre is faced with programme implementation challenges. The rural nature of the Municipality where this project is cited implies that challenges faced by the centre may reflect the challenges faced by rural communities in Ghana in the process of adopting ICT for development.

3.4 Data Collection Instrument

Focus Group Discussions (FGDs) were used as a means of data collection for the study. Since the study focused on understanding the lived experiences of participants, the FGDs were valid and suitable because they allowed participants to come together to brainstorm and have in-depth discussion that brought clarity on the topic (Creswell & Plano Clark, 2007). There were two FGD groups with five participants in each. After introducing the topic of discussion which centred on the nature of the CIC programme, the sources of the technology used at the centre, the delivery methods of the programme and the implementation challenges of the programme, four questions were discussed in each of the groups. The questions were: What do you know about the community information centre programme of this Municipality?, Where does the technology used in the creation of the Community Information Centre programme emanate from?”, How is the CIC programme carried out to beneficiary users?” and So far, what would you say are hiccups that have to be cleared to pave way for a smooth implementation of the CIC programme.

3.5. The Researcher’s Role in the Data Collection Process

In the discussion, the researcher played only a moderating role to facilitate the interaction without any undue interference. The moderating role ensured that the researcher assumed

only the outsider position as done by many qualitative researchers. According to Salifu (2015), the outsider position makes a researcher stay neutral and collect data that represent only the subjective feelings of participants.

The outsider position afforded the researcher an opportunity to reflect critically. The outsider position enables qualitative researchers to examine data from the perspectives of participants rather than their perspectives. It is therefore usual for the researchers to use words such as: “they” and “them” to acknowledge their outsider status in relation to the participants’ insider status (Dwyer & Buckle, 2009). The outsider position enabled the researcher to listen, interpret and critique the participants’ discussions.

Because of the outsider status taken, the researcher was mindful of the fact that his assumptions and biases could mar the credibility and dependability of the data (Creswell & Plano-Clark, 2007). To address this challenge, the researcher avoided undue influence on the participants during the discussions. The researcher’s role had been to organise and facilitate interactions among them with the aim of collecting, interpreting and critiquing their experiences.

3.6 Preparing the Data for Analysis

Prior to the analysis of the data, the researcher transcribed verbatim all the transcripts of the audio recordings into a text material. It took a total of 72 hours to complete after which the researcher sent the transcripts to the participants through their personal email addresses for them to read and amend where necessary using the track changes function in Microsoft Word. The transcripts were brought back without any changes giving the researcher an opportunity to commence the analysis. Backup notes were not used because all the recordings were clear and served the researcher’s purpose.

3.7 Data Analysis

With the aim of unpacking the issues implicated in participants' views about the implementation challenges of CIC programme in Ga East Municipality the data inductively used Interpretative Phenomenological Analysis (IPA). The choice of this analytical approach was to enable the researcher gain insights into how the participants made sense of the phenomenon under investigation, and to explore the meanings their idiographic experiences hold for them. The interpretative phenomenological analytical approach made it possible for the researcher to do thematic analysis of the data in order to condense the extensive material into core themes that would reflect the overall objective of the research (Creswell, (2007, 2008), Creswell & Plano-Clark, 2007).

Before coding the transcripts of the focus group discussions, the researcher developed a coding system as patterns emerged from the data. Responses of the participants were grouped according to the arrangement of the questions during the discussions. It was possible to group the responses because the participants in the two focus groups answered the same semi-structured questions. While coding, the researcher took note of crucial statements made by the participants that required specific attention. In doing the analysis, the researcher explored all possible categories and themes until he could not find any new information providing further insight into the existing categories and themes. The discovery of patterns of explanations, views and understandings then provided the basis for summarising the data (Johnson & Christensen, 2008).

3.8 Ethical Issues

In conducting the study, certain activities were carried out, not only to meet the professional research standards, but to ensure that the life and dignity of the people consenting to the study were respected (Payne & Payne, 2004). To achieve this, the researcher first submitted the work for his supervisors to consider if it met the research standards and the University's

ethical standards. Besides, the researcher obtained an introductory letter from the Department of Adult Education and Human Resource Studies, University of Ghana. The researcher told participants that the data collected would be handled honestly and organised in a way to ensure confidentiality and anonymity of the information collected from the participants. During data analysis, anonymity was used to conceal the identity of participants. The result of the study was not used for purpose to harm the dignity and life of the participants.

3.9 Chapter Summary

This chapter discussed the methodological issues of the research in accordance with the objectives of the research. The chapter included: the research approach and design, participants' selection, data collection procedure, the researcher's role in the data collection, how the data were prepared for analysis, the data analytical procedure used and ethical issues related to the research. The next chapter will present field data.

CHAPTER FOUR

PRESENTATION OF DATA

4.1 Introduction

This chapter presents the raw data collected from participants in line with the research questions and objectives of the study. The data were collected using two Focus Group Discussions (FGDs) labelled #FG1 and #FG2. A total number of ten participants took part in the group discussions, with each group having five participants. Discussions in the focus groups have been coded and presented in four headings as: Perceptions of centre coordinators and users on the CIC programme, sources informing the construction of the Community Information Centre Programme, method of the CIC programme delivery, and perceived implementation challenges of the CIC programme. Excerpts of the raw data presented in this fifth chapter will form the basis of results discussion in the next chapter.

4.2 Perceptions of Centre Coordinators and Centre Users on the CIC Programme at Ga East Municipality

This theme was generated from the participants' discussion on the question: "What do you know about the community information centre programme of this Municipality?"

The discussion was organised by firstly shuffling the Centre Coordinators and the Centre Users and then randomly assigning them to the focus groups. This was done because of the intention to create a context where varied views would be elicited from the participants. For the purpose of this data presentation, the information they gave were lumped together but with an indication of the source. To begin with, the data revealed interesting views about digital literacy skills programmes designed or built as software within the computer system for instructing learners on computer lessons. The programmes include manual developed in a form of a PowerPoint (hard and softcopy) used for instructing participants' learning to

acquire ICT knowledge and skills. The specific skills mentioned are, introduction to ICT (parts of a computer and their functions), computer basics (software programmes) and introduction to the internet. The statement below sums up the responses of some of the respondents on the issue from #FGD1.

People are provided access to ICTs and they in turn learn how to use these technologies. ...Some of us have participated in training workshops on basics in ICTs, including: typing on the computer and use of internet. The Centre offers computer programmes including: Microsoft word, Excel, PowerPoint and training on the use of the Internet (centre users in #FG1).

Other members of the group also said that:

...we were taught how to use digital devices like the smart phone and associated software applications like Facebook, WhatsApp, Twitter and email services to access information and enhance communication process and network with friends, family and business partners. A few months ago we taught some hairdressers how to use the smart phone to create Whatsapp groups to enhance communication in their businesses. ...later interested users visited us to learn how to use the email and Facebook. The Centre manager said; the Centre provides services including photocopy, printing services, and letter writing. ...they (the Centre Users) use to provide secretarial services like printing, photo copy and letter writing (centre co-ordinators in #FG1).

The participants' discussion also captured public education and community development. These two important concepts described health, sanitation, and civic education developed by the Centre to create awareness and to promote a healthy community. Occupational support services such as extension education for farmers, communication technology skills training for fashion designers and beauticians fall under community development. It should be noted that even though the Centre managers mentioned community education and development

programmes as part of the services they offered, they were frank to state that they were constrained by financial difficulties to be effective in their provisions:

...the Centre provides public information services in the area of health, sanitation and the development of the community. The Centre does this in collaboration with the Ministry of Health to provide health alerts on disease outbreaks. Besides, the Centre helps nursing mothers to access information on breast feeding. Also, information on HIV/AIDS and drug abuse can be accessed from the systems of the centre. ...it is a place where people can access information about activities in the community including developmental projects in the community (centre co-ordinators in #FG2).

On the same issue the participants claimed that:

I knew about the centre when I saw them having a computer awareness creation activity in my area, and occupational support services for hairdressers and dress makers. However we are constrained by many obstacles. The centre provides education to drivers on how to access the DVLA online driver license registration. ...I was part of the launch of the CIC. It was established to provide access to ICT and ICT skills and also to enable the people access information on District Assembly's development projects (centre users in #FG2).

In the group discussion, the participants also cited library services as an aspect of the centre's programme. For instance, they claimed that the Centre served as a library for students, pupils, and the general public who learn and access information as well as skills training. The statement below sums up the participants' views captured on this issue.

Students use the place to learn and do their assignments and the general public also uses the place for accessing general information including news items. ...I know school pupils come and learn, do their homework and play games (centre co-ordinators in #FG1)

In another instance, it was again averred that:

... As a university student I use the place for assignment and research and I know other educated people who come to seek for news and information on both local and international news on politics, economy, and education.Parents comes to the centre to find out about the computerised school placement system (centre users in #FG2).

4.3 Sources informing the construction of the CIC Programme

Another important issue raised and discussed by the participants had to do with what went into the creation of the centre programme. The leading question was “Where does the technology used in the creation of the Community Information Centre programme emanate from?”

After a lengthy brainstorm, the participants were unanimous that the technology used for the construction of the programme had its source outside the shores of Ghana. Evidently, the participants had this to say:

...in fact we cannot tell where specifically the programme software was designed, but we are able to tell that the computers are imported from Europe with all their in-built software by the Ministry of Communication and delivery to our outfit. ...we believe so because the computers at the centre have

manufacture labels of companies from the UK, the USA and Canada (centre coordinators in #FG1 & #FG2).

The participants further discussed how spare parts of the internal components (the software that run on the hardware devices) were procured:

The Ministry of Communication supplies us with patented CDs of software programmes which are procured from IT accessory shops or sometimes purchased online for installation on the computers at the centre. Clarifying this point, the participants gave this example: “Mavis Beacon is a software programme used at the centre, it was developed by an American video game software developer which is procured for the centre and used as a self-instructed learning tool for typing” (centre coordinators in #FG2).

4.4 Methods of the CIC programme Delivery

In terms of how the programme of the Centre was delivered, the participants“ discussed the question: “How is the CIC programme carried out to beneficiary users?”

A summary of the views of the participants have been categorised into the following: software instructor, workshop sessions and data base. The digital software instructor was used for the delivery of digital training programme. Specific services provided included: the computer basic and advance, learning how to type on a computer through a software instructor like the Mavis Beacon or other videos with instruction on how to use the computer. Depending on the digital literacy level of the individual he/she may access the service him/herself with minimal or no assistance from the Centre attendant. Workshop sessions were also used to deliver relatively short to long term digital literacy programmes organised by the centre. Quite apart from that, the Centre also used its information data base system to deliver community education service and information on community development activities as well as the library service. Also community outreach programmes, advocacy and

awareness creation were used to promote the centre programme through specific activities including community visits, meetings, durbar and health walks. Below is a verbatim of some other important details given by the participants:

Some of the information services are delivered through a software programme and/or can be accessed by interfacing with both the software and hardware technology. This information is accessed by the individual him/herself and/ with the assistance of a Centre staff, in some cases on behalf of the individual (#FG1).

A user said the software is:

a beautiful thing that teaches learners by instructing them to perform specific task using computer animation, audio voice and films. (#FG1).

During the same discussion another participants said:

Services are also delivered through the staffs of the Centre who act as facilitators, this is done by organizing computer training programmes by the centre. The computer training is delivered through power point presentation sometimes at the centre or any place of convenience within the community. Usually, programmes are organized in sessions; the least number of days I remember is three days and highest is three months. ... learners are taught by making them practice using the computer (#FG1).

The participants further noted that:

...depending on the participants participating in the programme we do organise workshop which may last between three weeks to three months, sometimes we do organize daily and weekend sessions for individuals and groups on personal request. I have accessed the secretarial services and they are mainly based on individual demand and are either accessed by the

individuals himself/herself or provided by the centre attendant on behalf of the individual (#FG1).

4.5 Programme Implementation Challenges of the Centre

The last theme was also borne out of the discussion of the question: “So far, what would you say are hiccups that have to be cleared to pave way for a smooth implementation of the CIC programme?”

The programme implementation challenges mentioned by the participants have been categorised into the following, illiteracy and myth, technical complexity, limited mode of delivery, foreign content, foreign technology and lack of local involvement.

Technical complexity as used here was explained by participants as the complex nature involved in interfacing with the ICTs at the centre. For instance, many of the respondents said registering or accessing an email is very complex task for new users of the service. It takes a lot of sophisticated skills for one to be able to access these technologies. Some respondents attributed the problem to the nature of the technology design, some say it is the lack of basic ICT skills of the people in the community. The following are sample views of participants on the issue:

“the technology is ok but just that our people do not have the technical skills to utilize the technology” (#FG1).

However, in a sharp contrast some other participants in #FG2 were of the view that:

the computer technology is too complex hence ordinary people cannot understand how to use it. How can an old woman access information online when she requires very complex skills to do that (#FG2).

In a bid to clarify the issue above, the participants added that:

...they perceive the system to be complex and think it is too late to learn it. A farmer said to me that he receives his information about the weather through Radio, he does not need any skills to listen and receive information on radio. Look at what it takes to use email services on a desktop computer, you have to pass through a long and difficult process but using WhatsApp is pretty easier. Therefore many find it difficult using the computer but are comfortable using the phone. The technical procedures involve in accessing information using computers deter potential users from making attempt to use it (#FG 1).

Advice was given as to how to address the implementation challenges, and it went like this:

I think the computer technology designers must follow the example of mobile/cell phone designers especially when they are designing computers for rural African communities. Unlike the computers at the centres the mobile/cell phone designers have overcome a lot of technicalities and made the technology user friendly. For instance, let's say you want to send a text message using computer Microsoft word or email. Apart from knowing the basic of computer skills like the functions of the various hardware and software, you need to understand the various graphical icon on the desktop to be able to locate Microsoft word or the web browser and follow a technical process to open and set it and so on... however one can follow easy steps to perform the same functions using the phone. Whatsapp has a voice message tool that makes it easy for those who cannot do text messages to send and receive voice messages (#FG 2).

A major challenge for the successful implementation of services at the Centre has to also do with the mode of delivery. As indicated earlier, the mode of delivery includes the instructor software, workshop sessions and data-base. Participants in the study observed that these modes of delivery rely solely on the desk top computer mediums, they were constrained by time, and distance hence are limited in their accessibility to many of the centre target beneficiaries. The programme time schedules were a barrier for users of the centre. Summing up, the following came out of the discussion:

Our people receive a lot of these information on radio without having to walk to the centre or sometimes travel there however with this centre people must visit the place before they can access and some time you get there you must join a queue for your turn before you can access the computer because there is not enough space A farmer said to me that he receives his information about the weather through news on TV, I do not need to walk for a long distance to come and find out about the weather (#FG1).

For the youths they do not have much of a problem with the service delivery, however the adult and working class do have a problem accessing the facility. Most of the people are farmers and traders who are always on the run so if you want to organize a computer training for them at the centre it will difficult for you to get them (#FG1).

.. Now smart phones are wide spread people find it easy to get their information using it because it is portable and less time consuming. Another area of challenge is that most of the services provided by the centre are provided by the internet café which is more effective because they are more accessible. How accessible are they? They operate 24hours a day, they respond

to the daily needs of the customer, and no restriction as soon as the customer buys the time he determines what the time is used for this is not the case with the Centre (#FG2).

From the discussions, illiteracy and myth have been classified under three sub-themes, namely; basic illiteracy, digital illiteracy, and myth. The general lack of basic literacy (the ability to read, write, and calculate) of many people in the community is the cause of the inability of many target beneficiaries to make use of the programme of the centre. Another issue related to illiteracy is the myth and abuse of technology. Perception among the local folks especially about the computer is that, one must be a computer wizard in order to be able to access information or use it. For some, it is impossible to carry out some task using the computer, for some others the mention of ICT centre brings to mind issues of social media misuse and abuse, internet bullying and other fraudulent activities like “Sakawa”. Below are views of the participants:

The point they make is if I acquire computer skills what I am going to use it for at my age „sakawa“ or work in the office. I not happy sometimes when my children are using to watch bad movies instead of learning their books. All the content of our programmes are in English and so many of our target beneficiary cannot access information from the centre. Illiteracy also makes people ignorant about the benefits of the computer. He went further to say that illiteracy makes people not to value information and therefore this contribute to the low patronage of centre. They also have wrong mind set about ICT some think ICT are tools used for fraud. All of these are barriers that either prevent potential users from accessing the programme or making users not attaining the benefit. Also Many do not value information and even the literate

among us who might know the value of information do not really know what to do with the information even when we have received such information (#FG1).

Another issue raised was that:

Most of the Centre Users cannot read English and therefore cannot understand how to access the plenty information on the internet. Another challenge is that a lot of people including some of my colleague assemblymen cannot write and read and so even if this information is made available many may not be able to access it. Why don't your colleagues access some training programme to help themselves? You see me I finish „A“ level around 1994 but I stop school for a long time but when there is a training programme for assemblymen I do not care whether it is for children or adult, many of my colleague feel big to come and learn the computer with the children around. Some challenges I think have to do with the digital literacy level of our people; for instance, I can tell you on authority that many of the assembly members do not even have basic digital skills to be able to access information not to talk about the many non-literate in the municipality.

On the issue of foreign content, the participants' view shows that the technology being used was not best fit to meet their needs. From the response given this has been attributed to two factors, that the technology does not match the skills and ability of its target beneficiary to enable them utilise the services and programmes of the centre at the same time some users complain that, the technology was made too complex and technical making it difficult for people to use. In either case, the technology becomes inappropriate to meet the needs of its target beneficiary.

The participants had this to say during the discussions:

The problem with the programme is that the system is not custom designed to meet local needs. As a civil servant I might understand how the bureaucracy of system works but how is the farmer able to maneuver through this complex system. For instance, if the farmer wants to access information about pesticides he must have the complex skill to interface with the world-wide web and search and locate the appropriate information from the sea of information, this is a challenge to most of the local people (#FG2)

The centre programme is not meeting the needs of the target beneficiaries; this is because many people in the community do not have basic computer skills not to talk about integrating that technology in their daily businesses activities (#FG2).

The response relating to the programme of the centre makes mention of the fact that the programme of the centre is mainly made up of foreign content. Another issue is the relevance of the programme to the needs of target beneficiaries. Respondents mentioned that most of the services rendered by the centre do not meet their immediate needs. Also on this issue was the limited content of the programme; respondents mentioned the fact that content of the programme is limited, even though the national policy document for the CICs has a wider scope, the Ga East centre programme is limited to digital literacy programme due to resource constraints.

It appears our people are not comfortable with the use of ICT for delivering certain services. The issue is that many of the people do not see the need to learn the computer, they are always engaged in things that can put kenkey on their table. Government agencies are dragging their feet when it comes to

delivering certain services electronically. Why is not possible for citizens to get their birth, death certificate and other related services electronically? I see a gap between the technology and our willingness to adopt these technologies.

Another participant concurred and said; *I see that we have a technology that has not yet been used to make the technology a part of the tools that facilitate the attainment of our needs. It could be that our services do not meet their needs* he explained that; *some few who take the chance to visit the facility come and realize that most of the content of the information on our system are not relevant. The success of the radio is because they included local content in their programme. Information accessed online are mostly foreign content and in languages other than the local language, many people in the community who do not speak or understand these languages are not able to access information. This is why programmes are not utilized by many of the target beneficiaries (#FG2).*

In #FG1 it was stated that:

The community is urban in terms of population demographics however most people go about their occupational and daily activities using conventional means, farmers still rely on traditional ways of disseminating information hence there is a mismatch between the technology adopted and the mediums through which their needs are fulfilled.

The last issue pointed in the discussion was stakeholder involvement. This crucial issue is further categorised into two, namely; including local participation and collaboration. According to the participants, decisions regarding the establishment of the centre were made

only at the assembly level by policy makers and technocrats. In relation to this issue, the participants expressed their views in the following lines:

...the people are not involved in any process of the development of the programmes, the programme are mostly designed externally and comes as part of the inbuilt software of the computer system, the programme lacks local content (#FG1).

Community people cannot relate to foreign information system available on the internet, hence most of the information as irrelevant to the needs of target beneficiary. The lack of involvement of local people in developing programmes also creates a situation where community ownership of the programme by the community is missing (#FG2).

4.6 Chapter Summary

This chapter presented the data collected from two focus groups held with ten centre coordinators and centre users of the CIC at the GA East Municipality. The major themes used in the data presentation are: Perceptions of centre coordinators and users on the CIC programme, sources informing the construction of the Community Information Centre Programme, methods of the CIC programme delivery, and perceived implementation challenges of the CIC programme. The next chapter will analyse and discuss the results according to the research questions and the objectives of the study

CHAPTER FIVE

DISCUSSION AND ANALYSIS OF RESULT

5.1 Introduction

The previous chapter presented the raw data collected from the field. This chapter presents a discussion and analysis of the field data in line with the objectives of the research. In the analysis, six themes emerged namely: innovation-driven learning programme, over reliance on foreign technology, programme delivery through software instructor, programme delivery through human attendants, programme delivery through information data base and implementation gaps of the Community Information Centre (CIC) programme of Ga East Municipality. The ensuing results and discussion will be based on these themes.

Research Question1 asks: How do Ga East Municipality Community Information Centre Coordinators and Users Perceive the Centre Programme?

In order to provide responses to this question the researcher engaged with the field data and the theme that emerged was innovation-driven learning programme.

5.2 Innovation-driven Learning Programme

Technology has become an indispensable aspect of the growth of most societal institutions. This appears to be the situation revealed in this research as the participants in this research indicated that the learning programme run at the Ga East Municipality centre was driven by the use of ICT, especially to acquire digital skills. In effect, the participants noted that the programme provided the opportunity for users (target population) to use new tools (ICTs) to access information, communicate and learn. Participants cited some subjects offered under the programme including: introduction to ICT (parts of a computer and their functions), computer basics (software programmes) and introduction to the internet.

In support of these facts, the participants said that:

...users access the computer and internet at the centre. Some of us have participated in a training workshop programme organised by the centre on basics in Microsoft word, Excel, PowerPoint and Internet (#FG1).

In another discussion, members of #FG2 indicated that the centre facilitated ICT training for both individuals and groups on how to use ICTs. Participants said that:

....we were taught how to use digital devices like the smart phone and associated software applications like Facebook, WhatsApp, Twitter and email services to access information and enhance communication process and network with friends, family and business partners.

The participants further stated that:

People such as civil servants and public servants, assembly members and students often use the facilities at the centre to send and receive emails, and access information on sports, politics, health issues and local culture (#FG2).

It appears that the quest to use and embrace technology at the centre was widely practiced among the educated elite and working class. This is evidenced in the participants' saying that:

...teachers, assemblymen, students and civil servants mostly visited the centre to conduct research and access general information on local, national and international issues. They also searched for information on on-going-development projects in the Municipality which have been captured by the electronic media (#FG2).

Kuriyan, Toyama & Ray, (2006) suggest in the literature that there should be further empirical research to explain the scope and nature of programme provided by rural community access points (CICs). Collaborating this point Ellen, (2003) stated that there has been limited investigation of the stakeholders' perspectives on the CIC programmes.

The field data reflect the experiences of centre attendants and users about the facilities and programme offered at the centre. While users were describing services that they had accessed at the centre which is mainly digital literacy skills training, attendants talked about services that were offered and those that the centre intended to offer. Centre attendants noted that in terms of purpose, the centre had a wider programme focus; it was not only intended to provide learners with digital literacy skills but was also intended to provide access to varied information in the area of health, education, indigenous culture, and local governance. This is in line with the vision of the Community Information Centre (CIC) as stipulated in the CIC project blue print which states that: “the Community Information Centres (CICs) (including the one at Ga East Municipality) are to create a rural access centre and use the medium of ICT to promote community-based ICT applications” (MOC 2004 p 14). The ICT applications, in turn, are to promote operational efficiencies delivered through effective and timely availability of information in the area of education, health, governance and economy (MOC, 2004). This shows that users are yet to benefit from other service that the centre intends to offer. This position confirms Papa, Galderisi, Vigo, Maria and Saretta, (2015) that most of the investment in CICs in Africa has not yet yielded the needed benefits.

A perusal of the results appears to further suggest that the current study is consistent with the proposed programme that the centre intended to offer and the concept of programme as outlined in the gap archetype framework (i.e. the theoretical framework of the study), which categorised the programme of CICs into: digital services, community education and development services, public information and economic development services.

It is also worth mentioning that in terms of the current programme offered at the centre, the results of the study indicate substantial emphasis on the provision of digital literacy at the expense of all the other programmes that the centre was established to offer. This may be a response to the needs of the programme beneficiaries to equip them with digital skills.

Whether or not the service provided by the centre meets the needs of its beneficiaries is something that would be soon uncovered in subsequent sections of this chapter. Nonetheless it must be stated as matter of fact that there is a gap between the intended programme that the centre was established to offer and the actual programme offered at the centre. In effect, the centre seems unable to deliver the entire programme for which it was established.

A growing body of literature seems to suggest that there exists a technological gap between developed countries and developing countries especially in Africa (Dogara., 2011; Heeks, 2008, Mbangala & Samzug, 2014). Boateng (2012), for instance, stated that technological disparity is not only limited to developed and developing countries but to males and females, and in certain circumstances, from households to households. In an attempt to bridge this gap, CIC initiatives has been launched in Ghana including the one in Ga East perhaps to address the needs of the community with seemingly low or no digital literacy. Having said this, it is equally important to also state that some aspects of the results of this research give an impression that because the quest to use and embrace the CIC programme at the Ga East centre was a culture widely common among only the elite and working class, many of the primary targets of the programme such as farmers, traders and local artisans were not able to access the centre programme. In terms of the CIC blue print, the results appear to contradict the section which stated among other things that the centre programme was meant for all users including farmers and even those who do not possess basic digital literacy skills and who cannot independently acquire and access ICT facilities. The primary target of the Ga East CIC are the poor farmers, traders, and artisans who cannot independent acquire and use ICTs however the results showed that most of these target beneficiaries do not access the centre programme. This could widen the ICT access gaps between the „ICT haves“ and the „have nots“.

Research Question 2 asks: What sources inform the construction of the Ga East Community Information Centre Programme?

In order to unpack the sources of the Ga East Municipality CIC programme, the participants were engaged in two focus groups and the theme that emerged from the data was “Over reliance on foreign technology”.

5.3 Over Reliance on Foreign Technology

It is documented in extant literature (e.g., Asenso-Okyere & Mekonnen, 2012; Dogara, 2011; Heeks, 2008; Heeks, 2009; Sam, 2013) that digital technologies in Africa are often outsourced and acquired from foreign computer manufacturing companies in the developed world. This assertion appears to be given credence in this research when participants explained that “... *though we cannot tell where specifically the computers were designed and how they are designed, we know that the computers are imported from Europe by the Ministry of Communication for an onward delivery to our outfit*” (#FG2). When probed further about evidence to the claim, the participants did not mince words to indicate that “... *but we believe so because the computers at the centre have manufacturing labels from the UK, USA and Canada*” (#FG2).

The participants further discussed how the internal components (the software that run on the hardware devices) were procured. In their own words:

The Ministry of Communication supplies us with patented CDs of software programmes which are procured from IT accessory shops or sometimes purchased online for installation on the computers at the centre (#FG2).

Clarifying this point, the participants gave this example: “*Mavis Beacon is a software programme used at the centre, it was developed by an American video game software developer which is procured for the centre and used as a self-instructed learning tool for typing*” (#FG2).

Situating the above results in the literature reviewed in this study, it is obvious that three main types of programme design were used by Community Information Centres (CICs) across the world. These include: laboratory (pro-poor), collaborative (Para-poor), and grassroots (per-poor) [Heeks, 2008 cited in Sam, 2013]. According to the results of the study, the Ga East Municipality CIC, for example, used the “Laboratory” (pro-poor) model in designing its software and hardware programmes. The results further indicate that both the computer software and hardware were designed in western countries and adopted for use at the Ga East CIC without any modifications to make it suitable for the community. Heeks (2008), whose theory formed the basis for the development of the conceptual framework of this study, stipulated that, this type of programme design is an easy way of harnessing resources from developed nations and applying it to solve developing nation’s problems especially in Africa. Heeks (2008), however argued that although such computer system design may seem a faster way of adopting ICTs to accelerate national development in remote and rural areas, it may suffer implementation lapses because the foreign technology was not modified to suit the community context.

Research Question 3 asks: How is the CIC programme delivered at Ga East Municipality?

This question sought to find how the content of the programme was delivered to users. The theme that emerged from the field data was blended delivery method. Participants explained that the centre delivers its programme through combination of different approaches and techniques. Irrespective of the approach or techniques used, the delivery mode relied heavily on hands-on-practice. Learners were made to learn by practicing how to use the ICT facilities at the centre.

5.4 Blended Delivery Method

The Ga East CIC used the blended delivery methods by combining a couple of delivery approach in the delivery of its programme including: Programme delivery through software instructor, programme delivery through centre attendants and programme delivery through information data base.

5.4.1 Programme Delivery through Software Instructor

The digital software instructor used at the centre was an audio-visual installed on the computer which was self-instructive and demonstrative. It aided learners to learn how to use the computer. Participants described the software as:

... a beautiful thing that teaches learners by instructing them to perform specific task using computer animation, audio voice and films (#FG1).

Depending on the digital literacy level of the individual he/she was able to access these learning tools (digital software instructor) by him/herself with minimal or no assistance from the centre attendant.

5.4.2 Programme Delivery through Centre Attendants

Participants explained that, face-to-face workshops/sessions are used to deliver relatively short to long term digital literacy skills, organised by the centre for targeted groups including students and civil servants. The learners meet face-to-face with trained centre attendants. The programme had a schedule and an outline of activities. It was organised at the centre on daily basis and upon request. A vivid account of the activities was explained as follows:

... services are delivered to us through presentation by the staff of the centre who act as facilitators, this is done by organising computer training workshop programme at the centre ...People walk into the centre every day and learn some computer lessons with the assistance of a centre attendant. The centre staff guide users on how to use the ICT equipment at the centre by asking them to perform some tasks (#FG1).

5.4.3 Programme Delivery through Information Data Base System

The results of the data further showed that, quite apart from the software instructor and workshops, the centre also used its information data base system to deliver educational and information services including library services.

This is an account of participants' opinions on this matter captured from #FG2;

*...information is accessed when users interfaced with the technology. The computer stores a lot of information which is accessed by users.
...information is made available to users through the online data-base.*

According to the data, the centre used different modes in delivering their programme. Irrespective of the mode of delivery, the technique used practical approach by engaging learners in series of task aimed at equipping them with digital knowledge and skills. Literature reviewed in this study on how CICs deliver programmes and services remained silent on this aspect of the topic (Ellen, 2003; Kuriyan, Toyama & Ray, 2006; Proenza, Bastidas-Buch, & Montero, 2002). This study has filled this gap by providing specific details on the delivery process. The results showed that the Ga East centre uses different delivery techniques including: digital software instructor, training workshop and information data base. The delivery technique is aimed at making the technology and programme adoptable to the people of Ga East.

The gap archetype framework used as the conceptual framework in this study, captured three components of the programme implementation process of CICs. These are: the technology design, the programme development and the delivery technique. It is interesting to note at this point that, the results of the study depicted these three components of the programme implementation process including: the programme content development, the source of the programme technology design (both hardware and software design) and the delivery technique used within the context of the Ga East community. It is also worth mentioning that

the conceptual framework of the study explained the interrelated functions of the various components of the implementation process.

The gap archetype framework posited that these component parts work as a system and therefore, for a successful adoption of a foreign technology from one context to another context, the various components of the programme implementation process must work in harmony with each other. In other words, for an effective implementation of the CIC programme, all the component parts must function as a system for the delivery of a particular product or services. For instance, it can be discerned from the data that, the programme content (mainly software) of the Ga East centre works on technology (mainly hardware). For this foreign technology to be properly applied in Ga East, the designers of the technology should consider the needs of potential users and other contextual factors in the Ga East community that can affect the implementation process. Failure to design the technology and its programme to suit the needs and conditions of the Ga East community may lead to programme implementation lapses. The framework concluded that in order to sustain the programme of the centre, the programme implementers must ensure that the programme content works in harmony with the technology to meet the needs of the community people. Based on this perspective this current study further explored the programme implementation challenges of the CIC in Ga East.

Question 4 asks: How do the Centre staff and users perceive the challenges confronting the implementation of the Community Information Centre programme?

The question on the challenges associated with the programme of the Ga East centre is at the heart of this study, it is therefore not surprising that the field data yielded some of the interesting revelations of the study. The theme that emerged from the field data was implementation gaps of the programme of the centre.

5.5 Implementation Gaps of the Programme of the Centre

This theme looked at the mismatch between the programme-technology requirement on one hand and the condition of the community as well as the needs of the beneficiaries on the other hand. This mismatch creates implementation gaps that impede successful implementation of the programme of the centre. This section discussed three main sub-themes which are: the lack of accessibility to programme, the lack of appropriate technology and programme and the lack of local participation.

5.5.1 The lack of Accessibility to Programme

To provide access to the programme of the Ga East centre means making the facilities at the Ga East centre easy for beneficiaries to use and benefit from. This implies that, removing all barriers that prevent users and potential users from accessing the programme. The literature acknowledge the fact that accessibility to the CIC facilities have been a major challenge to the implementation of CIC programme (Flor, 2001; Chaudhri & Dash, 2007; Harindranath and Sein, 2007). However the literature is focused on the economic and political factors that deny beneficiaries access to the facilities and programme of the centre (Kwapong, 2008; Frempong, Essegbey & Tetteh, 2007; Boateng, 2012). This study is more focused on the socio-cultural factors that deny beneficiaries access to the programme of the centre. The data revealed that certain fundamental skills (Basic English literacy) required to enable users and potential users of the Ga East centre to access, use and benefit from the programme offered at the centre were lacking. This has created a gap affecting the successful implementation of the programme of the centre. According to the data, the illiteracy among majority of the potential users of the facilities at the centre is a cause of inaccessibility of the programme of the centre to these users. In support of this assertion, it was revealed that:

Basic literacy is the code or a key that opens the door for one to access all information and opportunity that ICT offers. ... The inability to read and write in English among most beneficiaries of the project means they cannot read both text and graphical messages and symbols related to ICTs. It means also that one cannot interpret these text and symbols not to talk about understanding it or knowing its meaning. Also one cannot access instructional guide on the computer that can help the user to follow and understand the content of the computer (#FG2).

Participants categorised illiteracy among the community folks under two main domains which are; illiteracy in basic English and digital illiteracy. Basic English illiteracy, according to the participants, is *“the general lack of ability to read and write, in English, among potential users of the facility at the centre”*. On the other hand, digital illiteracy *“is a lack of basic ICT skills required to use and benefit from the facilities at the Ga East centre”* (#FG2).

The results of this study clearly corroborate Alemna and Sam’s (2006) study on ICT in deprived urban communities in Ghana in which he found among other things that basic English literacy rates were considerably low and the repercussion posed a challenge for people to access ICT. According to the researchers, statistics in Ghana indicate that over 85 percent of the content on the internet is in English (MOC, 2004; Dwyer & Buckle, 2009). Thus, if one was not literate in English, there was very little or no benefit to be derived from the internet (Alemna, 1999). The situation got worse when it came to computer literacy. The challenges posed by low literacy in accessing and deriving benefits from the use of the internet, one can conclude that, while the programme implementers identified very low knowledge of digital literacy among target beneficiaries and had designed digital literacy programmes to provide target beneficiaries they did not anticipate the lack of basic English literacy among large section of its target beneficiaries and therefore had not designed basic English literacy skills programme to provide for them. This has created a negative effect on

the use of ICTs in Ga East which has resulted in an implementation gap thus making the programme inaccessible to those who cannot read and write in English.

In both group discussions, participants stated other reasons for the inaccessibility of the programme of the centre saying:

Registering or accessing an email is a very complex task for new users of the service. It takes a lot of sophisticated skills for one to be able to access these technologies which are a great deal of challenge for the new users (#FG1).

The participants were also of the view that; *“the computer technology at the centre is too complex hence local farmers and traders cannot understand how to use it”* (#FG1). The complex nature of the technological design appears to have some denial consequences on some beneficiaries’ access to the programme of the centre.

Others argue that:

...the problem is with the designers of the computer; they assume everybody is skillful enough to know how to use it. They design very complex technology without thinking about those who are not sophisticated enough to master the use of the computers (#FG2).

Another cause of inaccessibility to the programme of the centre as indicated by participants was the fact that women do not patronize the use of the centre programme because of its complex nature. In support of this view, members of #FG2 argued that;

... perception among the women in the community is that, using a computer is complicated. Some local women feel their fingers are too rigid to use the computers. Women believe that anything to do with complex systems such as computers is the preserve of men. In addition, they believe that men are more educated than them and they believe that the centre is for the educated only.

However, in expressing a dissenting view, other participants also averred that:

it was not the case that women think ICT is only for men to master and use but the culture of the Ga East community is such that, women have a lot to deal with as mothers, home caretakers, and workers hence they do not have time to learn and if they do have time, it might not be enough to learn very complex technological skills (#FG1).

It can be observed from the data that many of the potential users of the Ga East Municipality centre particularly women were challenged in accessing ICTs at the centre as result of the social and economic role they played in the community. Another factor causing inaccessibility to the programme of the centre was the distance and location of the centre. Participants in the study observed that beneficiaries have to travel to a specific centre in order to access the programme of the centre. Many beneficiaries were thereby constrained as a result of commuting from long distances to the centre. The location of the centre poses a challenge to the accessibility of the programme of the centre. Participants mentioned that:

The centre is far from our home and therefore its quite difficult walking everyday there, because of which we do not frequently visit the centre (#FGD1).

Another participant also said that:

The location is not visible to many people hence many people are not aware of the centre, some others even think the centre was designated for the staff of the District Assembly because it was located within the compound of the District Assembly (#FGD1).

The operational time of the centre is also a barrier towards accessing the programme and services of the centre. Many of the participants complained of the fact that the computer training time schedules conflicted with their work schedules and home duties. In support of this view the Participants said: “the centre opens only during the week and not during the

weekend, most people do not have the time to visit the centre during the week because of their work” (#FGD1).

Research studies have largely looked at ICT accessibility from the perspective of availability of ICT infrastructure for people to use (Dogara, 2011; Mbangala & Samzugui, 2014). This current study, however, revealed that accessibility to ICT programme goes beyond just the mere availability of ICT infrastructure. Rissola and Centeno, (2011) concluded in their study that availability of the technology is necessary but not sufficient, rather certain foundational skills are needed for effective use of ICT programmes. The results of the current study indicate that some of the factors that deny target beneficiaries access to the programme that the centre offered were: illiteracy, technical complexity, time, location and distance to the centre. The study also revealed two different shades of illiteracy that prevent the people of Ga East Municipality from accessing and using ICTs. These are: basic English illiteracy and digital illiteracy. In a study with similar results, Eshet-Alkai (2004) found that both basic English literacy and digital literacy were required for people to be able to use and benefit from ICTs. He further developed a comprehensive framework describing the required skills needed for one to use ICTs. These include: photo visual skill, reproduction skill, branching skill, information skill and socio-emotional skill. The current study further showed that majority of the beneficiaries of the programme lacked these skills.

Although the CIC programme implementers anticipated a lack of these skills (digital literacy) and had designed programme to provide these skills, they failed to deal with other factors (including conditions of high basic illiteracy, perception of beneficiaries, technical complexity, time, location and distance of the centre to target beneficiaries) that equally had a denial consequences on some beneficiaries’ access to the programme of the centre. For instance, the location of the centre was too close to the District Assembly and this sent a wrong signal to potential users who thought the centre was designated for only the staff of the

District Assembly. Other people who wanted to be ordinary and avoid officialdom were therefore discouraged due to the location of the centre. These created a gap affecting the implementation of the programme of the centre.

The gap archetype framework identified three gaps which are: the hard-soft gaps, the country context gaps and public-private gaps. According to the conceptual framework of the study, the gap created by the lack of accessibility to the programme of the centre is the hard-soft gaps. This concept (hard-soft gaps) explains two features of the implementation process. On one side is the hard aspect, in other words the technical aspect of the programme implementation process, which include: the design and installation of computers and its associated skills required to install, use and maintain the technology and programme of the centre, on the other side is the soft aspect of the programme implementation process which are conditions that exist in the community including: high basic illiteracy, perception of beneficiaries, time, location and distance of the centre to target beneficiaries. The Ga East Centre programme implementers focused on the technical aspect (hard factors) of the programme implementation process without considering the condition (soft factors) that exist in the community, which deny target beneficiaries access to the programme of the centre. This has created an implementation gap termed as the hard-soft gaps.

In a desperate attempt to reap the benefits of ICTs, technology systems are adopted from one context and implemented in another without taking necessary steps to ensure that the new system is aligned with contextual factors, thus leading to huge implementation challenges. The results of the study revealed that the programme of the centre which functions on a foreign technology was adopted in Ga East without necessarily considering those factors (conditions of high illiteracy, distance, time, location e.t.c) that had a denial consequence in accessing the programme of the centre.

5.5.2 The Lack of Appropriate Technology and Programme

The field data showed that, there is lack of appropriate technology. Participants pointed-out that:

the technology used at the centre were designed by foreign computer manufacturing engineers, they do not understand the local community and local people, neither do they know what technology is good for the people. They added that "...the technology at the centre is only relevant for a section of the public specifically students, civil and public servant (#FG2).

It is interesting to note that participants admitted the fact that the technology was useful but was not appropriate to meet the pressing needs of a large section of the target beneficiaries especially the uneducated and lowly educated (i.e. beneficiaries who have no secondary school education). Participants explained that the programme content was not useful to meet the needs of beneficiaries. The evidence in support of this view is reflected in the statement made by participants during #FG1; they said that:

The programme of the centre lacks local content. Most of the information on the system units of the centre are foreign information, the local farmers, traders, and parents do not find the need to use these information.

It was also added that;

...in our part of the world we are yet to make use of these technologies (computers, internet e.t.c.) as part of the tools that facilitate our daily activities (#FG1).

The participants described the programme and technologies used at the Ga East Centre as inappropriate towards meeting the daily needs of the majority of the beneficiaries. This was because the implementers of the project did not consider the needs of local stakeholders in choosing the technology for the centre neither did they consider the needs of the people in the design and development of the programme of the center. Discussing the results in the light of existing literature, Sey, (2008) found that appropriate technology contributed towards the

success of ICT project india. Heeks (2009a), stated that appropriate technology that matches local realities is key for the success of ICT initiatives in the rural and underserved communities in Asia. The lack of appropriate technology and programme affect the successful implementation of the programme of the centre.

Participants mentioned the fact that most of the services rendered by the centre do not meet their immediate needs. The results of the current study confirms Mutala's (2005), study in which he found out that one of the biggest challenges faced by Community Information Centres (CICs) in Africa is how to make their technology relevant to local needs and provide appropriate information and services for community members. According to the current study, this situation is so because there is a lack of community needs assessment to help determine the appropriate technology relevant to the social economic, educational and technological needs of the local people.

The Gap Archetype theory explained the country context gaps as gaps created as result of transferring a technology and a programme that have proven relevant in one country to another without modifications to make the programme relevant within the context of the new country. The results of the study showed that the foreign technology used at the centre seems not relevant to the social, economic and educational needs of target beneficiaries because it lacked local content. This has hampered the implementation of the programme of the Ga East CIC, thus has created a gap termed in this study as the community context gap. The results showed that, the foreign technology adopted at the Ga East centre which may have worked successfully in the developed world but appeared not functional in the Ga East community because it was not modified to suit the needs of the target beneficiaries.

A related issue on the programme content of the centre is its limitedness. Respondents mentioned the fact that, the content of the programme is limited. This is in spite of the fact

that the policy document has a wider scope; the programme is limited to digital literacy programme. The results showed that, the programme of the centre is focused on providing digital skills programmes. The centre trains people to acquire digital skills at the expense of other areas vital to meet the needs of target beneficiaries including digital agriculture, digital commerce, e-governance, digital education.

5.5.3 The Lack of Stakeholder Involvement

The final sub-theme from the field data under the programme implementation challenges is the lack of stakeholder involvement. According to the participants there is no participation of local stakeholders in the design and delivery of programme. Some participants argued that:

The community people did not have knowledge and skill of computer; they could not have participated in designing the computer hardware or software (#FG2).

In contrast, other participants in #FG2 argued that:

...though we do not have the technical skills to participate in the technical aspect of programme implementation, we could have played important roles in determining a suitable programme content that meets our needs. However we were not given the opportunity to play a role in the implementation of the programme.

Participants also added that; *“The, programme is mostly designed by experts in computer programming” (#FG1).*

The issue of collaboration also surfaced during the discussion. Centre coordinators admitted that the centre faced the challenge of getting other departments and agencies which are willing to collaborate with the centre. One of the participants narrated a scenario in which the Ga East centre made attempts to collaborate with the Department of Public Health to create a database for the dissemination of public health information to general public; he said:

... I must also admit that our attitude towards the management of information does not help at all, you talk to the Head of Department of Public Information to help inform the public and they start to behave like you are requesting for classified information (#FGD1).

Two issues came up from the data discussed under this section namely: local participation and collaboration. According to the results there is no participation of local stakeholders in the design and delivery of programme, therefore the programme beneficiaries lacked awareness and ownership of the programme of the centre. This affected the patronage of programme of the centre. The data also revealed that the programme implementation team adopted a laboratory programme design and by this design they involved the technical people at the expense of local stakeholders including the programme beneficiaries. They focused much on the ICT installation and other technical aspect of the installation project implementation to the neglect of the social, cultural, economic and educational potentials existing in the community.

Another related implementation gap is collaboration. The centre lacked collaboration between it and other state agencies including private organization; for instance, the centre needs to collaborate with the department of health and other government agencies in order to implement an effective health education programme however this is missing. The CIC can also be more effective if they work together with other institutions having similar objectives. Sey, (2008) for instance in a study observed that, libraries played critical role in the promotion of CIC in Ghana. However collaboration between libraries and ICT centre is always a big challenge because these facilities (the libraries and ICT centres) are owned by different departments and political and economic interest have made it difficult for an effective collaboration.

5.6 Chapter Summary

This penultimate chapter presented and discussed the results of the research in themes and in accordance with the objectives of the research. A recap of major highlights is that the study largely confirmed and affirmed most of the issues raised in previous studies about community centre programmes. The theoretical framework adopted in this research is the Gap Archetype framework, which states that for the successful implementation of CIC programme, technologies that are designed for use in a country but transferred for use in another country must be modified to suit the context of the country in which that technology is applied. Failure to make the technology adoptable to the contextual factors within which it is applied will result in programme implementation gap. The theoretical framework identified three gaps resulting from a mismatch between the technology and programme on one hand and the country context within which both are applied. The gaps are: the hard-soft gaps, country context gaps, and the public-private gaps.

CHAPTER SIX

SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The preceding chapter presented and discussed the results of this research in relation to the research questions drawing on the gap archetype theory and research-based extant literature on community information centre programmes. This final chapter presents an overview of the research, summarises the findings, and draws conclusions based on the findings. The chapter also offers recommendations, contribution to knowledge, limitations of the research, and suggestions of areas requiring further enquiry.

6.2 Overview of the Research

The objectives of this study were to find out how Ga East Municipality Community Information Centre coordinators and users perceive the centre programme, the source of the technology used at the centre, the nature of the programme delivery and the key challenges affecting the implementation of the programme. To achieve these objectives, the study adopted a qualitative approach relying on the interpretative phenomenological design. Among the myriad of phenomenological studies, the realistic phenomenology was chosen because it enabled the researcher to gain insights into the life-worlds of the participants. Interpretative Phenomenological Analysis (IPA) was used to make sense of the phenomenon under investigation, and to explore the meanings participant's idiographic experiences held for them. A total of ten participants took part in a Focus Group Discussions (FGDs). Two FGDs made up five members each; group one (i.e. #FG1) comprised of users of the facility and group two (i.e. #FG2) involved the managers of the facility.

6.3 Summary of major findings of the Study

On how the Ga East Municipality centre coordinators and users perceived the centre programme, the study revealed that while the coordinators perceived the programme as an initiative focusing on digital and occupational literacies as well as health and agriculture, the users perceived the programme as only a means of facilitating acquisition of digital literacy skills.

With regards to sources that informed the construction of the Ga East Municipality Community Information Centre (CIC) Programme, the study found that the centre relied mainly on foreign technology without modification, relegating to the background the issues of compatibility.

Furthermore, the finding on how the Ga East Municipality community information programme was delivered revealed that the centre used hands-on practice skills training to instruct learners. The delivery approach was in three different techniques: programme delivery through software instructor, programme delivery through centre attendants and programme delivery through information data base.

Another important issue uncovered in this research was that many of the users of the facilities at the centre especially farmers and traders could not access the centre programme as a result of the lack of basic and digital literacy.

Finally, this research also found that the programme run at the centre lacked local content and had thus created implementation gaps and made the centre programme seem inappropriate to meet the digital needs of users and potential users.

6.4 Conclusions

Based on the major findings of the research, the following conclusions were drawn:

Firstly, having found in this research that challenges such as the lack of basic and digital literacy, the lack of appropriate technology and the lack of local participation affected the implementation of the centre programme meant that the centre may not have been functioning to its full capacity.

Secondly, the research found that the centre coordinators and users had varied perceptions on the nature of the centre programme, they were likely to approach the use of the facilities differently. Again, since the users of the centre perceived the programme only in terms of facilitation of digital literacy skills acquisition, it meant that they must have had a narrow view of the nature of programme offered at the centre.

Finally, the finding of this study that the centre relied mainly on foreign technology without modification to suit the conditions of the Ga East community implies that the centre programme may not have adequately met the digital needs of all the target beneficiaries. The anomaly may also have reduced an all-inclusive participation at the centre.

6.5 Recommendations

Based on the findings and conclusions drawn, the study proposes the following recommendations to help improve the implementation of programme of the centre.

1. The Government of Ghana should decentralise its ICT implementation strategy to allow local participation of stakeholders at the district, zonal and community levels in the planning, designing and implementation of ICT initiatives to stimulate local initiatives and innovation.
2. The centre Manager should consider first the needs of the community in adopting any technology. In designing programmes for the community, the centre should undertake

research to identify community needs and interest in ICT to match the programme of the centre to meet these needs and interest.

3. The management of the CIC should step up their effort in creating awareness and advocacy of the programme of the centre by undertaking outreach programmes, organising durbars and advertisement of their programme on radio, TV and social media.
4. The management of the CIC could collaborate strategically with state departments and civil society organizations in the area of programme design, capacity building, and coordination. For instance, the centre should collaborate with the Non-formal Education Division (NFED) of the Ministry of Education to provide Basic English Literacy for those beneficiaries who cannot read, write and do simple numeracy.
5. The centre should procure modern technological software like “electronic word of mouth” and integrate it in to the software system of the centre to allow beneficiaries use local language to interface with the technology at the centre.

6.6 Contributions to Knowledge

This research makes theoretical and practical contributions to the body of knowledge on the issues of community information centre programmes. Theoretically, the use of the gap archetype theory as a lens to analyse the results is arguably a novelty and represents originality of thought about the concepts of Community Information Centre programmes. Practically, the recommendations made at the end of this research add up to the repertoire of knowledge on the most effective and viable ways of improving community information centre programmes in Ghana and beyond.

6.7 Limitations of the Study

Despite the contributions of this research to the field of ICT and local governance, it has some setbacks emanating mainly from methodological issues such as the use of a nonprobability sampling technique (purposive sampling) and the use of only the qualitative approach. It therefore lacks the capacity to generalise for the entire community information centres in Ghana. Nevertheless the researcher followed standardised qualitative research approach to ensure that the data is internally valid and reliable. Subsequently the strict analytical process used by the researcher ensured that researcher biases were avoided in conducting the study

6.8 Suggestions for Further Research

As have been indicated already, this research has a limitation in terms of external validity and generalisability because of the nonprobability method used to select only the Ga East CIC. On the basis of this, it is suggested that a similar study be replicated in many other communities to validate the findings.

Besides, since this research used only the qualitative approach and many researchers have reservations about the use of this approach in a research, it is recommended that a future research with a similar or the same focus should be conducted utilising a mixed method approach of both qualitative and quantitative designs.

REFERENCES

- Abissath, M. K. (2005). A Tool for Modern Fishermen in Ghana. Retrieved June, 20 2017 from <https://nextbillion.net/news/mobile-phone-a-tool-for-modern-fishermen-in-ghana/>
- Akakpo, J. (2008). Rural Access: Options and Challenges for Connectivity and Energy in Ghana Jointly published by GINKS and IICD.
- Alemna, A.A. (1999). The impact of new information technology in Africa. *Information Development*, 15 (3), 167–170.
- Alemna, A.A., & Sam, J. (2006). Critical Issues in Information and Communication Technologies for Rural Development in Ghana. *Information Development*, 22(4), 236-240. DOI: 10.1177/0266666906074181. Accessed on: November 30, 2012.
- Amariles, F., Paz, O., Russell, N., & Johnson, N. (2006). The Impacts of Community Telecenters in Rural Colombia. *Journal of Community Informatics*, (V 2(3) (Special Issue on Telecentres).
- Asenso-Okyere, K., & Mekonnen, D. A. (2012). The Importance of ICTs in the Provision of Information for Improving Agricultural Productivity and Rural Incomes in Africa. UNDP Working Paper 2012-015. Retrieved from: <http://web.undp.org/africa/knowledge/WP-2012-015-okyere-mekonnen-ict-productivity.pdf>. Accessed on: July 2, 2013.
- Awotwi, J. E., & Owusu, G. (2010). Ghana community information centers (CiCs) e-governance success or mirage? *Journal of E-Governance*, 33(3), 157-167.

- Bailur, S. (2007a) The complexities of community participation in rural information systems projects: the case of “Our Voices”, IFIP 9.4 Social Implications of Computers in Developing Countries, Taking Stock of E-Development, Sao Paulo, Brasil.
- Basaruddin, B. S., Zulkifli M., Norzaidi, M., Chong, S. (2011). The Role of Information Technology in Future Investment Decision-Making. International Journal of Electronic Finance; Portfolio diversification: VL-2. 10.1504/IJEF.2008.021805ER
- Benjamin, P. (2001) The Gaseleka Telecentre, Northern Province, South Africa, in Latchem. C. & D. Walker (eds.) Telecentres: Case Studies and Key Issues, Vancouver: The Commonwealth of Learning, 75-84.
- Boateng, M. S. (2012). The Role of Information and Communication Technologies in Ghana’s Rural Development. Library Philosophy and Practice (e-journal), (Paper 871 pp. 23). Retrieved from: <http://digitalcommons.unl.edu/libphilprac/871>. Accessed on: May 17, 2013.
- Braun, J.V., & Torero, M. (2006). Introduction and overview. In M, Torero & J.V. Braun (Eds.). Information and Communication Technology for Development and Poverty Reduction: the Potential of Telecommunication. Washington, D.C.: IFPRI.
- Chaudhri, N., & Dash, S. S. (2007). Community information centers: E-governance at Practice of Electronic Governance, 366-369.
- Colle, R. (2005) Memo to Telecenter Planners, The Electronic Journal of Information Systems in Developing Countries , 21, 1, 1-13.

Commonwealth Network of Information Technology for Development (COMNET-IT) by SFI Publishing, London, 1999. ISBN: 1-901127-14-1.21 Rue Miollis.75732 PARIS Cedex 15 France ost, United Nations.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA, US: Sage Publications, Inc.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Creswell, J. W., & Plano Clark, V. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: Sage.

Dagora, M. A. (2011). *Information Requirement for Rural Development Through Telecentre in Kaduna State*. Nigeria College of Arts and Science.

Dwyer, S. C., & Buckle, J. L. (2009). The space between: On being an insider-outsider in qualitative research. *International journal of qualitative methods*, 8(1), 54-63. wigan-ojs.library.ualberta.ca/index.php/IJQM/article/viewFile

Dzidonu, C. K. (2003). United Nations Economic Commission for Africa (UNECA) Report commissioned by UNECA as part of its Technical Assistance to the Government of Ghana.

Ellen, D. (2003) Telecentres and the provision of community based access to electronic information in everyday life in the UK. *Information Research*, 8, 2, Paper no. 146.

Eshet-Alkalai, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia*, 13(1), 93-106.

- Fabiola, A., Olga, P. P., Nathan, R., & Nancy, J. (2006). The Impacts of Community Telecenters in Rural Colombia. *Journal of Community Informatics*, 2(3) (Special Issue on Telecentres).
- Flor, A.G. (2001). ICT and Poverty: The Indisputable Link. SEARCA. Paper for the Third Asia Development Forum on “Regional Economic Cooperation in Asia and the Pacific”. Bangkok. Retrieved from: <http://www.worldbank.org/html/extdr/offrep/eap/eapprem/infoalexan.pdf>. Accessed on November 30, 2012.
- Frempong, G., Essegbey, G., & Tetteh, E. (2007). Survey on the Use of Mobile Telephones for Micro and Small Business Development: The Case of Ghana. Accra: CSIR-Science and Technology Policy Research Institute (STEPRI).
- Garrido, M., Sey, A., Hart, T., & Santana, L. (2012). *Literature Review of how Telecentres operate and have an Impact on eInclusion*. JRC Technical Reports. Luxembourg: Publications Office of the European Union.
- Ghana-Information Communication Technology for Accelerated Development. (2003). *The Ghana ICT for Accelerated Development (G-ICT4AD) Policy*. The Republic of Ghana. Accra Press.
- Ghana Integrated Fund for Electronic Communication. (2013). The Community Information Centres Project. Retrieved From Http://Gifec.Gov.Gh/Index.Php?Option=Com_Content&View=Article&Id=38.
- Ghana Statistical Service, (2012). 2010 Population and Housing Census Report: Ghana Statistical Service Post Enumeration Survey. Republic of Ghana.

- Gomez, R., Hunt, P., & Lamourex, E. (1999). Telecentre Evaluation and Research: A Global Perspective. Paper Published, available at <http://www.idrca/telecentre/evaluation/nn/06-Tel>.
- Greensberg, A. (2005). ICTs for Poverty Alleviation Basic Tool and Enabling Sector. Sida, ICT for Development Secretariat. Retrieved from: <http://www.eldis.org/fulltext/sidaictpoverty.pdf>. Accessed on: November 30, 2012.
- Harindranath, G., & Sein, M. K. (2007). Revisiting the Role of ICT in Development. Retrieved from: <http://www.digitalknowledgecentre.in/files/2012/REVISITING-THE-ROLE-OF-ICT-IN-DEVELOPMENT.pdf>. Accessed on: July 3, 2013.
- Harris, R., Kumar, A. and Balaji, V. (2003) Sustainable Telecentres? Two Cases from India, in *The Digital Challenge: Information Technology in the Development Context*.
- Harris, R.W. (2004). Information and Communication Technologies for Poverty Alleviation. United Nations Development Programme's Asia-Pacific Development University of Ghana <http://ugspace.ug.edu.gh>, 164.
- Harris, R. and Rajora, R. (2006) Empowering the Poor: Information and Communications Technology for Governance and Poverty Reduction – A Study of Rural Development Projects in India, UNDP-APDIP, Elsevier, <http://www.apdip.net/publications/ict4d/EmpoweringThePoor.pdf>
- Heeks, R. (2002). Information systems and developing countries: Failure, success, and local improvisations. *The Information Society*, 18(2), 101–112.
- Heeks, R. (2008). “ICT4D2.0: the next phase of applying ICT for international development”, *IEEE Computer*, DOI, 41(6), 26-33, University of Manchester, UK.

Heeks, R.B. (2009a). Worldwide expenditure on ICT4D, ICT4Dblog, 6 Apr

<http://ict4dblog.wordpress.com/2009/04/06/worldwideexpenditureonict4d/>.

Heeks, R.B. (2009b). Beyond subscriptions: actual ownership, use and nonuse of mobiles in developing countries, ICT4Dblog, 22 Mar

<http://ict4dblog.wordpress.com/2009/03/22/beyondsubscriptionsactualownershipuseandnonuseofmobilesindevelopingcountries.>

Heeks, R., & Kenny, C. (2002). ICTs and Development: Convergence or Divergence for Developing Countries? 7th International Working Conference of IFIP WG9.4.

Bangalore, India. Retrieved from:

http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/documents/di_wp10a.pdf. Accessed on January 24, 2013.

Heidegger, M. (1962). *Being and Time* (J. Macquarrie & E. Robinson, Trans.), New York: Harper and Row. (Original work published 1927).

Hudson, H.E. (2001a) The Acacia programme: Developing evaluation and learning systems for African Telecentres, in C. Latchem and D. Walker (eds.) *Telecentres: Case Studies and Key Issues*, The Commonwealth of Learning, Vancouver, Canada.

Hudson, H. (2001b) *Telecentre Evaluation: Issues and Strategies*, in C. Latchem and D. Walker, (eds.), *Telecentres: Case Studies and Key Issues*. Commonwealth of Learning, Vancouver, Canada.

Hunt, P. (2001) True Stories: Telecentres in Latin America and the Caribbean, *The Electronic Journal on Information Systems in Developing Countries*, 4, 5, 1-17.

- International Telecommunication Union. (1998). World Telecommunication Development Conference Report. Valleta (Malta). International Telecommunications Union (ITU).
- (2012). Measuring the Information Society. Geneva: ITU. 230p. Retrieved from:http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2012/MIS2012_without_Annex_4.pdf. Accessed on: July 5, 2013.
- Johnson, B. & Christensen, L. (2008). Educational research: quantitative, qualitative, and mixed approaches. Thousand Oaks, Calif.: Sage Publications.
- Karara, J. (2015). Rwanda: ICT Goes Beyond Towns. The New Times Rwanda first daily, p.1
- Krishna, S., & Walsham, G. (2005) Implementing Public Information Systems in developing countries: Learning from a Success Story. *Information Technology for Development*, 11, 2, 123-140.
- Kumar, R. and Best, M. (2006) Social Impact and Diffusion of Telecenter Use: A Study from the Sustainable Access in Rural India Project, *Journal of Community Informatics*, 2, 3.
- Kuriyan, R, Toyama, K. and Ray, I. (2006) Integrating Social Development and Financial Sustainability: The Social and Political Challenges of Kiosks, *Proceedings of ICTD*
- Kwapong, O.A.T.F. (2008). An Empirical Study of Information and Communication Technology for Empowerment of Rural Women in Ghana. *African Journal of Information and Communication Technology*, 4 (3), 80-86. Retrieved from: <http://www.jite.org/documents/Vol8/JITEv8p001-017Kwapong415.pdf>. Accessed on November 30, 2012.

- Madon, S. (2005) Governance lessons from the experience of telecentres in Kerala, *European Journal of Information Systems*, 14, 401-416.
- Mayanja, M. (2006) Rethinking Telecentre Sustainability: How To Implement A Social Enterprise Approach - Lessons From India And Africa, *Journal of Community Informatics* , Special Issue: Telecentres, 2, 3.
- Mbangal, B. & Samzug, A. (2014). The Role of Telecentres in Tanzania's Rural Development. A Case Study of Sengerema District Council, Mwanza Region. The Open University of Tanzania.
- McConnell, S. (2001) *Telecentres Around the World: Issues to be Considered and Lessons Learned*, ICT Development Group, Richmond.
- Merleau-Ponty, M. (1962). *Phenomenology of Perception: International library of philosophy and scientific method*. Routledge & Kegan Paul.
- Ministry of Communications. (2004). *Community information centres (CICs) in the age of ICT: Ghana's blueprint for action*. Retrieved from http://www.researchictafrica.net/countries/ghana/CICs_in_the_Age_of ICTs_Blueprint_2004.pdf.
- Mukerji, M. (2008) Telecentres in Rural India: Emergence and a Typology. *The Electronic Journal on Information Systems in Developing Countries*, 35 (5), 1-13.
<http://www.ejisdc.org/ojs2/index.php/ejisdc/article/viewFile/520/254> retrieved on 16th August 2010
- Montealegre, R. (1999) A Case for More Case Study Research in the Implementation of Information Technology in Less Developed Countries, *Journal of Information Technology for Development*, 8, 4, 199-207.
- Mutula, S. M. (2005). Peculiarities of the digital divide in sub-saharan africa. *Program: Electronic Library and Information Systems*, 39(2), 122-138.

National Development Planning Commission, (2011). Medium-Term National Development Policy Framework Ghana Shared Growth and Development Agenda (GSGDA) II, 2014-2017: Volume I.

Obayelu, A. E., & Ogunlade, I. (2006). Analysis of the Uses of Information and Communication Technology for Gender Empowerment and Sustainable Poverty Alleviation in Nigeria. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, Vol. 2 (3), 45-69. Available at: <http://ijedict.dec.uwi.edu/include/getdoc.php?id=1347&article=172&mode=pdf>. Accessed on: November 30, 2012.

Oestmann, S. & Dymond, A. (2001). Telecentres – Experiences, Lessons and Trends. In C.Latchem & D. Walker (Eds.) *Perspective on Distance Education: Telecentres: Case Studies and key issues (Management, Operation, Application, and Evaluation)*. (p.1-15). British Columbia: West Broadway.

O'Neil, D. (2002) Assessing community informatics: a review of methodological approaches for evaluating community networks and community technology centers, *Internet Research: Electronic Networking Applications and Policy*, 12, 1, 76 – 102.

Oppong-Tawiah, D. (2010). Information and communications technologies for development and bridging the digital divide in Ghana: A culture, policy and technology approach. Unpublished MBA dissertation, University of Ghana Business School, Legon, Accra.

Oppong-Tawiah, D. & Boateng, R. (2011). ICT and bridging the digital divide in Ghana: A culture, policy & technology approach. *Proceedings of the Africa Digital Week*, Accra. 26-54.

Papa, R., Galderisi, A., Vigo M., Maria C., Saretta, E. (2015). *Smart and Resilient Cities. A Systemic Approach for Developing Cross-sectoral Strategies in the Face of Climate*

Change. *Journal of Land Use, Mobility and Environment* 11- VL- 8 DO-
10.6092/1970-9870/2883 ER

Parkinson, S. (2005). *Telecentres, access and development: experience and lessons from Uganda and South Africa*. Ottawa: International Development Research Centre.
<http://www.idrc.ca/openebooks/189-2/> retrieved on 12th October 2010.

Payne, G., & Payne, J. (2004). *Key Concepts in Social Research*. London: Sage.

Proenza, F. J., Bastidas-Buch, R., & Montero, G. (2002). *Telecenters for Socioeconomic and Rural Development in Latin America and the Caribbean*. Inter-American Development Bank (pp. 17). Washington, D.C.

Rissola, G., & Centeno, C. (2011). In Commission E., Centre J. R. and Studies I. F. P. T.(Eds.), *ePractice digital literacy workshop on digital competences for social inclusion actors and intermediaries*. Luxembourg: European Commission. Retrieved from http://ftp.jrc.es/EURdoc/JRC65355_TN.pdf.

Rogers, E., and Shukla, P. (2001) *The role of Telecenters in development communication and the digital divide*, *Journal of Development Communication*, 2, 12, 26-31.

Roman, R. (2003). *Diffusion of innovation as theoretical framework for telecenters*. *Information Technologies and International Development*, 1(2), 53-66.

Roman, R. and Colle, R. (2002) *Themes and issues in telecentre sustainability*, *Development Informatics Working Paper Series Paper, No. 10*, Institute of Development Policy and Management, University of Manchester.

Roman, R. and Colle, R. (2005) *Notes on Research for Telecenter Development in Connected for Development: Information Kiosks and Sustainability* (eds. Badshah, A., Khan, S. and Garrido, M.), 89-96, United Nations Publications.

Rose J. B. (1999). *Information and Informatics Division United Nations Educational, Scientific and Cultural Organization (UNESCO) Published for*

- Salifu, I. (2015). Exploring the drivers of teacher professionalism in Ghana. *Educational Studies*, 41(5), 534-550.
- Sam, J. (2013). The use of Information and Communication Technologies in Poverty Alleviation in Rural Communities in the Central Region of Ghana. Thesis Submitted to the University of Ghana, Legon; Department of Communication Studies. Retrieved from: <http://ugspace.ug.edu.gh>
- Sarpong, D. D., Egyir, I. S., & Osei-Asare, Y. (2007). Assessing Rural Women Food Producers Capacity to Adopt Modern ICTs – A Case Study of the Mfantseman District of Ghana. *AAAE Conference Proceedings*. (pp. 373-376).
- Sartre, J-P. (1956). *Being and Nothingness: An Essay on Phenomenological Ontology* (E. Barnes, Trans.) New York: Washington Square Press. (Original work published 1943).
- Scharffenberger, G. (1999) Telecentre Evaluation Methods and Instruments: What Works and Why?, in *Proceedings of IDRC Workshop on Telecentre Evaluation: A Global Perspective*, Far Hills, Québec.
- Sey, A. (2008). *Mobile Communication and Development: A Study of Mobile Phone Appropriation in Ghana* [Thesis]. Retrieved from: <http://digitallibrary.usc.edu/utis/getfile/collection/p15799coll1127/id/192409/filename/print/page/download>. Accessed on: November 30, 2012.
- Sey, A., & Fellows, M. (2009). *Literature Review on the Impact of Public Access to Information and Communication Technologies* [Working Paper]. Retrieved from: <http://library.globalimpactstudy.org/sites/default/files/docs/CIS-WorkingPaperNo6.pdf>. Accessed on: November 30, 2012.
- Singh, J. (1999). *Leapfrogging development? The political economy of telecommunications restructuring* Albany, State University of New York Press.

- Smith, C. (1992) Motivation and personality: Handbook of thematic content analysis, with Atkinson, J., McClelland, D., and Veroff, J.(eds.), New York: Cambridge University Press.
- Suchman, L. (2007). Human-machine reconfigurations: plans and situated actions. Cambridge, UK: Cambridge University Press. University of Ghana <http://ugspace.ug.edu.gh>.
- UNDP (2009). Statistics of the Human Development Report, United Nation Development Programme.
- UNESCO (2006). Using ICT to Develop Literacy: UNESCO ICT in Education Programme Bangkok 10110, Thailand.
- USAID (2008). Cost Assessment of Teacher Support for E-Learning. Research Triangle Institute International.
- Wilbur S. (1964) Mass Media and National Development: The Role of Information in the Developing Countries Mass media. Issue 25 of Publicación miscelánea // Instituto Interamericano de Ciencias Agrícolas de la OEA Volume 117 of Stanford paperbacks. Stanford University Press. Sourced from https://www.google.com.gh/search?tbo=p&tbm=bks&q=inauthor:%22Wilbur+Schramm%22&source=gbs_metadata_r&cad=4
- Whyte, A. (2000) Assessing Community Telecentres: Guidelines for Researchers, International Development Research Centre (IDRC), Canada.
- World Bank (2003). Lifelong learning in the global knowledge economy: challenges for Developing Countries (directions in development). Washington, D.C.: World Bank Pub.