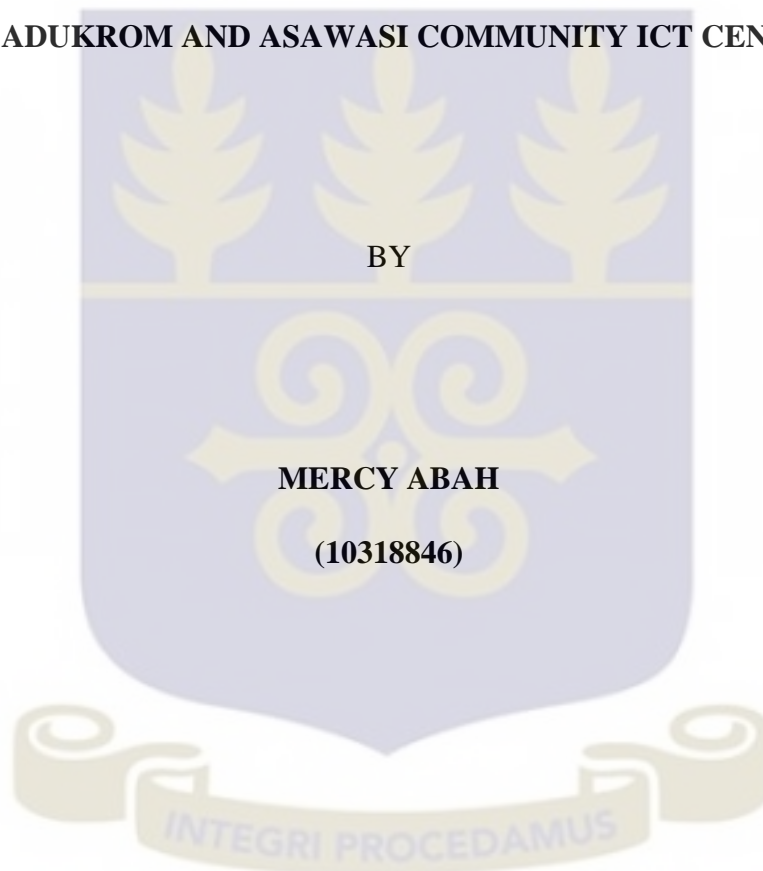**UNIVERSITY OF GHANA, LEGON**

COLLEGE OF EDUCATION

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

PROMOTING DIGITAL INCLUSION IN ASHANTI REGION: ASSESSMENT OF

THE ADUKROM AND ASAWASI COMMUNITY ICT CENTRES

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL INFORMATION STUDIES DEGREE.

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DECLARATION

I hereby declare that this thesis is my own work excluding references and quotations which have been duly acknowledged. This research was supervised by Dr. Ebenezer Ankrah and Prof. Perpetua S. Dadzie.

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PROF. PERPETUA S. DADZIE …………………. ……………………

(CO-SUPERVISOR) **SIGNATURE** **DATE**

DEDICATION

This work is dedicated to staff of the Department of Information Studies, my family and

loved ones for their prayers and support towards my education.

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My sincere gratitude goes to God for giving me an opportunity to finish this work. I couldn't have made it this far without God.

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LIST OF ABBREVIATIONS

ACIC –   Asawasi Community ICT Centre

AIC –   Adukrom ICT Centre

AMMA –   Asokore Mampong Municipal Assembly

ATR –   African Traditional Religion

CSS –   Cascading Style Sheet

DI –   Digital Inclusion

FCC –   Federal Communication Commission

GES –   Ghana Education Service

GIFEC –   Ghana Investment Fund for Electronic Communications

GLA –   Greater London Authority

HTML –   Hypertext Mark-up Language

ICT –   Information and Communication Technology

IT –   Information Technology

ITU –   International Telecommunication Union

JHS –   Junior High School

LAN –   Local Area Networking

MCE –   Municipal Chief Executive

MP –   Member of Parliament

MS –   Microsoft

NABCO –   Nation Builders Corps

PDC –   Pasha Digital Centres

PTA –   Parents and Teachers Association

SHS –   Senior High School

ABSTRACT

Technology is an important tool of this present world; therefore there is a need for individuals to become digitally included to fit into today's society. The study examined the role of Adukrom ICT Centre and the Asawasi Community ICT Centre in promoting digital inclusion among the people of Adukrom and Asawasi communities in Ashanti Region. The main objectives of this study were to determine the extent of awareness and use of the AIC and ACIC and the challenges the people face in the use of the centres.

The quantitative survey research was adopted for this study. The target population comprised individuals in the Adukrom and Asawasi communities, and the managers of both ICT centres. The total population was 47,261. Convenience sampling technique was used for data collection with a sample size of 947.

The findings revealed that all the sampled individuals from Adukrom and Asawasi were aware of the ICT centres and they became aware through television and friends. Despite the awareness however, they did not use the centres. Challenges such as poor computer skills, insufficient working hours, slow speed of computers and power outages were discovered.

Considering these challenges, the study recommended that the managers of the ICT centres should embark on intensive advertisement on TV, radio and social media platforms to promote the centre and enlighten individuals about the type of services they offer which would also increase awareness of the centres. A further research could be conducted on digital inclusion for sustainable development in Oti region.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, there is a rapid transformation due to the proliferation of ICTs. Technology has taken over our lives on daily basis, from shopping, to bank transactions, to payment of bills. Mobile devices such as phones, tablets, smart watches, televisions, and laptops have become part of human life and therefore people in communities must become digital literates to fit into today's society. However, it's disturbing to find out that many are still lagging behind this technological world. Countries know the implication of ICT in socio-economic development as well as building knowledge-based societies. Investments in ICTs are necessary in development of an economy, they are necessary to bridge digital divide to enable equal access to information and to foster innovation (Bilbao-Osorio, Dutta & Lanvin, 2014). The United Nations (UN) posits that though digital divide is mainly a result of income gap, governments, institutions and individuals must do everything possible to bridge the divide as ICTs are important factors of development (Gordon & Trammel, 2016).

Digital divide and digital literacy are concepts that have been used severally by policy makers while the term digital inclusion is still quite new. DI addresses digital divide and digital literacy on issues such as opportunities, knowledge, access and skills in utilizing digital technologies at the policy makers' level. DI also focus on people with low education, literacy, education, ICT skills, income which may limit access to digital technology, people who may not be fluent in the language in which information is presented and people in areas without good internet access as well as persons living with disabilities. For example digital technology has made information easily accessible

for people with disabilities by generating information in different formats. While discussions on digital divide are mostly focused on access available to individuals, DI is lays emphasis on practical and approaches to address the needs of various societies. DI is basically closing the technological gaps by empowering people through ICT. This can be achieved by designing activities to promote ICT access for the development persons with disabilities, indigenous people, women, youth and children (ITU, 2018). Ghana as a developing country has a vision to modernize agriculture, bring diversification into industries and promote job growth. Therefore if there is an improvement in industrial activities, it will have a positive impact on the environment and bring about development in our communities which will also improve the standard of living for many people. Failure to promote technological innovations that accelerate infrastructural growth can bring about poor health care, inadequate power supply.

ICT plays part in information generation, processing and use in the 21st century. ICT has reshaped the all aspects of people's lives. Lack of ICT infrastructure and skills to generate and use information can lead to decreased social, economic, cultural, political participation in societies. The rate at which ICT is adapted in some communities is still a great concern in the 21st century where digital technologies have affected all aspects of human endeavours to make life easy. There difference between individuals and societies in their access to digital technologies. Technology has helped in all aspects of human endeavor in areas such as distance education, agriculture, transportation and marketing. Global economies thrive on digital innovation which to a large extent leads to advancement in development through digital inclusion. Accessibility to digital technology is essential in order generate and utilize information to gain knowledge. It is in connection with the relevance of ICT to growth and development that the concept of

digital inclusion cannot be over-emphasized. Thus, the necessity for members of a society to be hooked on and use digital platforms has become an important discourse in literature. The rate at which members of a community become digitally included can determine the level of development in that country. Improvement in digital participation will enable people communicate with their loved ones. This can be accomplished by changing the people of a community from being digitally excluded to being digitally included. DI makes members of a society feel valued and it provides the opportunity to access the digital world, this will provide the requisite knowledge to practice important cultural practices and to become digital literate.

Governments over the world set high standards on economic and social development. One of the key fixings to accomplishing such development is the utilization of ICTs (for example radio and different broad communications) to pass on information required for these developments. The use of ICTs in expansion grew consistently with the development of new inventive technologies. With the appearance of these advances (PCs and web) Sweden built up its first Community Information Centre in 1958 which utilized ICTs, for example, the PC and web to advance financial improvement. Before long, the idea of CICs quickly spread to other European nations, notably Scandinavia, Germany and the United Kingdom (Ibrahim, 2018). CICs were established essentially to provide access to ICTs to unserved and underserved communities to accelerate development communities thereby promoting digital inclusion for all citizens. As a result of the benefits derived from DI, government of various countries has established resource centres to help in bridging the technological gap. For instance in Brazil, the government started to implement telecentres in 1998. These telecentres are usually non-profit centres where individuals can access ICT for free. In Malawi, the government

decided to establish telecentres in all 193 constituencies in the country under the "Connect a Constituency Project" which would enable rural people have access to ICT. 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, to close the gap among rural and urban societies (Vannini, Nemer & Rega, 2017; Kapondera & Hart, 2016 & Awowi, 2010). Also, the government has initiated the digitize Ghana agenda to facilitate infrastructural development and connectivity to enable underserved and unserved communities have access to technology (GIFEC, 2018). The Minister of Communication, Ursula Owusu Ekuful has launched an eLearning programme called 'Wolo'. Wolo is a platform which seeks to bring improvement to the academic performance of senior high school students and individuals who want to upgrade or acquire new skills. Two of such projects were initiated in 2016 by the Asokore Mampong Municipal Assembly (AMMA) in the Adukrom community and the GIFEC in 2013 within the Asawasi community. Notwithstanding the benefits of technology, there are a divides between the advanced and unindustrialized countries. Even in the developing states there is a big gap in the rural and urban communities, the 'haves' and 'have nots' (Merritt, 2018). The society now depends on technology and there is a need to include everybody in the digital generation.

1.2 Statement of the Problem

ICT revolution has affected human life and has impacted positively in areas such as employment, healthcare, education and poverty eradication. The rapid increase of electronic information has brought a significant change across all aspects of human activities worldwide at a rapid pace (David, 2014). There are several opportunities that

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can be derived from digital technology. However, there exist a gap between those who have the access to IT infrastructure and those who do not. (Chetty, Aneja, Mishra, Gcora & Josie 2018). Again, the cost of delivering new technologies is often too high leading to operational expenses. Financial and social sustainability is a major disadvantage to the DI programme (GSMA, 2014). An observation and interaction made by the researcher among the people of Adukrom and Asawasi communities revealed that the indigenes of the community have low level of literacy in the use of technology. A preliminary investigation by the researcher also revealed that the natives find it difficult to connect to the Internet because they don't have Internet access. Even though some of the individuals in the community have ICT devices, it is difficult for them to use because they do not have formal ICT training on how to use these devices. This study therefore sought to determine how digital inclusion would be promoted among the people of Adukrom and Asawasi communities.

1.3 The Purpose of the Study

The purpose of this study was to examine the role of Adukrom ICT Centre and Asawasi Community ICT Centre in promoting digital inclusion among the people of Adukrom and Asawasi communities in Ashanti Region and to recommend ways of promoting digital inclusion in the Adukrom and Asawasi communities through the ICT centres.

1.4 Objectives of the Study

The following are the objectives of the study:

1. To determine the extent of awareness of the AIC and the ACIC.

2. To investigate the extent of use of the ICT centres by people of Adukrom and Asawasi.

3. To identify the level of computer literacy among the people of Adukrom and Asawasi.

4. To determine the role of ICT centres in promoting DI.

5. To find out the perceived benefits of DI to the people of Adukrom and Asawasi.

6. To find out the challenges people face in using the AIC and ACIC.

7. To recommend ways of promoting digital inclusion in the Adukrom and Asawasi community.

1.5 Theoretical Framework

Theoretical framework simply hosts the theories that guide a study. The theory is the building block of a research which underpins a study and explains why the research problem exists. According to Neuman (2014), a theory is a map that helps a researcher to better conceptualize or envision a problem, see connections, and explain why things happen. A theoretical framework enables a researcher to identify a research problem, the research questions that need to be answered and the methodology that would be employed in conducting a research. In quantitative research, a theory provides a proposed interpretation for the correlation among variables being tested by the researcher (Creswell, 2014).

There are various theories which guide how individuals use and adapt technology over time. One of the theories is the Framework for the Development of E-Skills for Digital Inclusion (Pokpas, 2014). The rationale of the model is that particular DI prerequisites, for example, access to ICT, skills and effective utilization lead to momentary results, which involves the essential utilization of ICT for individual advantages. The essential utilization of ICT brings about short term effect which prompts continuous conduct

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changes prompting improvement in the personal satisfaction and conquering a portion of the difficulties influencing one's life. For example, new knowledge leading to better nutrition for improved health. It is imagined that these enhancements in the long run prompts a more extensive effect on people and society, which at last concurs with the targets of the national economic plan. These include increased social, cultural, economic, political participation in society, empowerment and social inclusion of marginalised groups, the creation of an information and knowledge-based society.

Figure 1.1: Framework for the Development of E-skills for Digital Inclusion
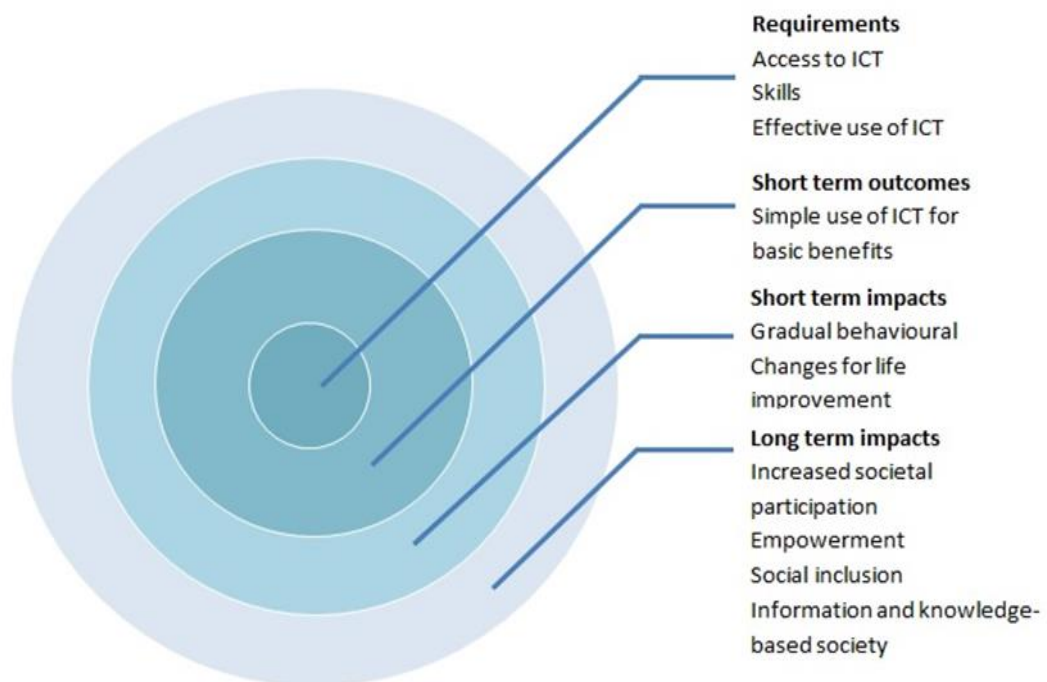
Source: Framework for the development of e-skills for digital inclusion (Pokpas, 2014)

The diagram above indicates the impact of the development of e-skills for digital inclusion overtime. This implies that having access to technology for basic use is expected to lead to long term impacts. The framework for the development of e-skills for digital inclusion reveals that there is the need for specific DI requirements in order to utilize digital technology. Once an individual has access to technology it is necessary to use it effectively in order to derive the full benefits that comes along with it. As a result of the benefits derived from digital technologies it is necessary for members of a society to be hooked on to digital platforms to create an information and knowledge based society.

1.6 Scope of the Study

The study was undertaken in Adukrom and Asawasi communities in the Ashanti Region. The study examined the role of the ICT centres in promoting digital inclusion among the people of Adukrom and Asawasi communities in Ashanti Region and recommended ways of promoting digital inclusion in the Adukrom and Asawasi communities. The targeted population was 13, 742 individuals from Adukrom and 33,517 individuals from Asawasi as well as the managers of both ICT centres because they have information about their centres. The study did not include other ICT centres in the Ashanti region. Other major limitations were funds and time, as the conduct of a survey research requires extensive resources and time.

1.7 Significance of the Study

This study fits perfectly into Ghana's developmental agenda of building strong ICT infrastructure to move into knowledge economy. It would inform policy makers about the digital divide in the Adukrom and Asawasi communities, the role of ICT centres in

promoting digital inclusion and how to overcome this divide through digital inclusion. It would help policy makers to develop strategies to diffuse ICT to unserved and underserved areas. Again, it would also benefit IT professionals and NGOs to become aware of the level of IT skills of people from Adukrom and Asawasi and the challenges they face whiles using digital technologies and how to help curb these challenges. It would also enable IT managers implement their ICT projects to promote digital inclusion to realize their long term economic and social impact. Furthermore, this study would add to knowledge in the area of DI. Although there have been several researches on DI, little have been done on the role of ICT centres in promoting digital inclusion, and this research would contribute to filling that gap. Also, this study would serve as a reference for future researchers who may want to carry out similar researches in the same field.

1.8 Organization of Chapters

The study is organized into six (6) chapters.

Chapter one is the introduction which includes the background of the study, statement of the problem, purpose of the study, objectives of the study, theoretical framework, scope of the study, significance of the study and organisation of chapters.

Chapter two is a review of relevant literature pertaining to the study. It discusses the topic on world view, African view and Ghanaian view such as awareness of ICT centres, extent of use of ICT centres, computer literacy skills and use ICT centres, the role of ICT centres in promoting digital inclusion, perceived benefits of digital inclusion and challenges in the use of ICT centres.

Chapter three covers the methodology which includes the research design, selection of cases, population of the study, sample size, sampling technique, instrumentation, pre-testing, mode of data collection and data analysis.

Chapter four focuses on data analysis and interpretation of data.

Chapter five presents detailed discussion on major findings of the study.

Chapter six provides a summary of findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviews relevant literature that relate to the role of the AIC and the ACIC in promoting digital inclusion among the people of Adukrom and Asawasi communities. Literature review discusses written works on a given topic, discovers conflicts, contradictions and variables in other research work (Ankrah, 2014). Literature would be reviewed based on the following topics.

1. Awareness of ICT centres

2. Extent of use of ICT centres

3. Computer literacy skills and use of ICT centres,

4. The role of ICT centres in promoting digital inclusion

5. Perceived benefits of digital inclusion

6. Challenges in the use of ICT centres.

2.2 Awareness of ICT Centres

According to Moore (2007) community libraries were the first attempt to improve access to information. CICs began to emerge in the early 1970s to provide improved access to information. The main focus was to acquire, process, store and disseminate information needed by individuals in the communities they served. In the 1980s, CICs began to change as a result of ICT and became more popular. By the end of the 1990s the ICT revolution has taken over several activities that could be done manually. As a result of the rapid transformation of information in creating knowledge based societies, the world has become more alert on the important role ICT plays in development. Community ICT Centres have been established by developed and developing countries

to provide IT services individuals in their communities. Several studies have been carried out on awareness of ICT centres   .

Rahim, Tie and Begum (2014) investigated the diffusion of ICTs in rural areas community. The findings revealed that an effectual and operational integration of ICT in communities requires premeditated planning with collaboration from members from the community. Leaders, volunteers, government agencies and other organizations must collaborate to have a strong financial support to create a learning environment for people in remote areas and promote socio-economic development.

Nampijja (2010) examined the role ICT plays in the development of rural communities. Data was gathered from 40 ICT beneficiaries and 10 key informants. The study revealed that users who are aware of the ICT centres confirmed how the centre has brought a significant transformation in their political, economic and social lives. However, there is a need to strengthen the centre to enlighten individuals to develop skills to make maximum use of the resources.

In support of Rahim, Tie and Begum (2014) findings, Kassongo, Tucker and Pather (2018) also conducted a study on government aided ICT assess, adoption, usage and its effect on the life of deprived South African citizens. Data was collected from 385 respondents. The findings showed that e-skills, understanding peoples need for information and an immense awareness is a prerequisite to convey the enormous benefits from the objectives of the governments' policies. The findings also indicated that less privileged citizens use ICTs to cater for their needs such as, communication, employment and education.

A study by Orsnes (2013) revealed that 47,1% of the respondents go online for information as compared to the other sources of information. He further stated that the effective use of ICT largely depends on how accessible, available and how reachable and portable they are to the users. Access to information is appropriate to enrich people's lives. However, there is no equal access to information. Persons staying in well-to-do urban areas can decide on a wide range of information sources unlike persons living in underprivileged urban societies and rural areas (Moore, 2007).

Acquah (2012) also investigated the role ICT plays in the improving and developing small and medium scale enterprises in Ghana. The study discovered that ICT awareness appear to be high among SMEs proprietors in Ghana. Be that as it may, use of ICT is very still low.

Oyediran (2015) conducted a study on awareness and adoption by architectural, engineering and construction industry educators in Nigeria. The findings showed that there is restricted degree of awareness to the different ICT instruments and the majority of the instructors were great in taking care of word preparing contrasted with different devices. In this way it is significant for the administration of the organization to give enough assets to execute IT strategies.

On the contrary, Waiswa and Okello-Obura (2014) reviewed literature to find out the extent to which ICTs contributed to e-governance in Uganda. The findings revealed that mobile phone based e-administration have demonstrated to be progressively fruitful, since they depend on inner financing. Additionally where governments financed ICT extends enormously, ill-advised supervision have carried a portion of these ventures to

a stop. Likewise poor digital skills can't be tended to by giving ICT foundation in communities that are affected.

In relation to, Waiswa and Okello-Obura (2014), the Minister of Communications, Mrs Ursula Owusu-Ekuful and her team visited the CIC built for the Kwamang community in the Sekyere Central District. It was discovered that the centre which has good security features and twenty computers was empty without any computer as well as the router meant for internet connectivity. The walls in the centre were covered with moulds. She mentioned that the government will provide the necessary infrastructure to make life easier for the citizens of Ghana, but it is the duty of communities and municipal assemblies to ensure that the facilities a functioning and in good condition.

Similarly, David (2014) studied the challenges of promoting DI in rural setting by PDC to determine challenges facing PDC in rural places, and the effects of PDC in promoting DI in rural place. The study found that DI projects are usually unsuccessful in rural areas due to inadequate promotion. Therefore, the study recommends that the ICT centre must create awareness by advertising to the community and educating the community on the type of services they offer which will also create a public profile for the centre.

2.3 Extent of Use of ICT Centres

Harvey (2016) in a study on the use of ICT digital and social media in youth work sought to find out the extent of use of digital and social media in youth work. The study revealed most workers used ICT daily. Report on Ireland showed that more than three quarters respondents (77%) used digital and social media. 80% of the full time workers

of also indicated that they used technology in their work. Also, in Austria, Finland, and Denmark they study found that more than (90%) of their respondents also used ICT in their work. The most common use of ICT was for Emails. Harvey further stated that in order to use ICTs effectively there is a need for some level of literacy. In support of Harvey (2016), the 2012 RIA Ghana household and individual access to ICT and use survey revealed that only (8.5%) homes have computers and only (3%) of these computers are connected to the internet. (6%) of respondent stated that they use computer at home, (45.6%) said they use internet cafes, (44.5%) said they use computer in school, (42.9%) use computers at work and (6.2%) use computers in the library. With this report it can be seen that Ghanaians do not make maximum use of ICT centres set up in the various communities (Research ICT Africa, 2014).

Similarly, Siddiquah and Salim (2017) in identifying the ICT facilities, skills, usage and the complications encountered by the students of advanced education, selected fifty (50) students from three public universities. The findings revealed that most of the students have computers with internet connectivity at universities and home. Most respondents used computers for academic and recreational purpose.

Deen-Swarray (2016) conducted a study toward DI on understanding the literacy effect on acceptance and usage of mobile phone and internet in Africa. The study found that (21%) of people with electronic skills made use of ICT. Most people used mobile phones for social networking (16.2%) and emailing (17.5%).Individuals that used the mobile phone for emailing and social networking were those with writing literacy, e-skills literacy, English-language literacy and an advanced level of education.

Even though most individuals owned mobile phones, adoption and use increased among those who had e-skills. On the contrary, Acquah (2012) also investigated the role ICT plays in the improving and developing small and medium scale enterprises in Ghana. The findings revealed that some enterprises do not make use of ICTs in their businesses and they gave explanations such as end user adoption of technology and cost of software and hardware.

2.4 Computer Literacy Skills and Use of ICT Centres

Deen-Swarray (2016) in a study toward DI on understanding the literacy effect on acceptance and usage of mobile phone and internet in Africa revealed that, adoption and use increased even more when e-skills literacy are present. Most people with computer skills used the internet for email emailing and social networking. Individuals who used mobile phone for emailing and social networking were those with writing literacy, e-skills literacy, English-language literacy and an advanced level of education.

Also, according to Siddiquah and Salim (2017) in identifying the ICT facilities, skills, usage and the complications encountered by the students of advanced education, Fifty (50) students were selected from three public universities. The findings revealed that most students are familiar with skills like Microsoft office suite, internet surfing and emailing but have poor skills in the use of digital libraries, blogs and discussion forums.

ERAN (2017) organised a conference dubbed "capitalising on digital literacy skills for capacity development of people who are not in education, employment or training in South Africa". The conference was meant to establish if digital knowledge skills could serve as an accelerator to help in developing the capacity of people who are

unemployed. The study also revealed that a digital knowledge skill is very important in developing people. Instituting of IT centres in societies will provide ICT skills based training to endow people.

Contrary to ERAN (2017), Garrido, Sullivan and Gordon (2010) conducted a study to propose a framework to know the role of IT skills in improving job prospects for people with little earnings. The research was undertaken with over seventy (70) non-governmental organizations that provide training in ICTs and other job opportunities in thirty (30) countries worldwide. The researchers stated that having basic ICT skills is necessary but is usually not enough to improve employment situation of disadvantaged groups.

Mingaine (2013) studied skill encounters in adopting and using ICT in community SHS in Kenya. The findings confirmed that there are limited numbers of qualified ICT teachers; hence there is a need to employ and train more teachers in ICTs to make them effective. In support, Bacon and MacKinnon (2017) conducted a study on lasting digital skills improvement, present picture and upcoming challenges. The findings showed that there will be a momentous transformation in the labour force over the next ten to twenty years. As such there is a need to develop strategies to upgrade the skills of those who are made redundant through automation.

Furthermore, Chetty, Aneja, Mishra, Gcora and Josie (2017) views digital skills as a foundation for poor people to work and empower themselves. People with exceptional potentials can take advantage of openings to attain the required skills to adjust to the rapid transformation in this current digital age. However, providing ICT infrastructure

in communities with poor digital skills will not fully solve the problem. For instance in Brazil, despite the ICT infrastructures in place, individuals do not see the need for digital access.

2.5 The Role of ICT Centres in Promoting Digital Inclusion

An ICT centre offers services in the information and communication technologies in the form of training, counselling, seminars, certification and validation of knowledge. Bonilla (2005) cited in Nemer (2015) proposed methods to escape from an inclusive rationality that is connected to an economistic perspective. He stated that for someone to be digitally included, one must seek strategies that build openings so that the less privileged can take part in decision making process. Nemer further stated that managers of ICT centres must have enforce policies in the digital technology because these policies are the main strategy for promoting digital inclusion.

Similarly, David (2014) investigated the challenges of promoting DI in rural Pasha Digital Centre. The study identified how Pasha centres promote their services to the community. Respondents were asked how they agreed to the promotions by pasha centres. The respondents strongly agreed those ICT training and job placements are promoted. Respondents were also asked about awareness promoting ICT careers, the respondents agreed to a slightly high extent and agreed to limited level on promotion of ICT skills training based on standards requested by the ICT sector. However, advertising and public relations helps create a public profile for digital centers.

Federal Communications Commission (2017) suggested strategies and made recommendation for DI. The commission recommended that digital inclusion initiatives

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can be facilitated through outreach to consumers, to educate them about available resources, like existing programs that will facilitate their work. The commission also suggested that, there should be policies to make broadband more affordable for low-income households to promote digital inclusion in addition to broadband access and adoption. Ibrahim (2018) explored implementation challenges of CIC plan in the GA East Metropolis in the Greater Accra region. Data was put together using a focused group dialogue using ten participants. The findings revealed that in order to sustain CIC projects, implementers of the programme need to integrate local views into the technology design. If the ICT programme meets the direct needs of users there would be high usage. Sam (2013) also 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. Digital technologies need to be disseminated various formats considering the target group. ICT centres can promote digital inclusion by improving their environment. There is a need to have trained and experienced people at the ICT facilities to support users and the managers of the centres must invest in local content which are relevant (Beyond Access, 2014). Dias (2011) argues that even though governments of various countries put in large investments to promote DI, the results of such programs are still evaluated poorly.

2.6 Perceived Benefits of Digital Inclusion

Alam and Imran (2015) surveyed the elements which influenced refugee migrants adopting technology and how important it is to their societal inclusion. The study revealed that refugee migrants beheld technology as an important device for knowledge, conforming to the broader community, employment opportunities, accessing education and staying in contact with loved ones. Nemer (2015) proposed methods to escape from

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an inclusive rationality that is connected to an economistic perspective. Nemer stated that in order to include someone digitally, one must seek policies that generate openings so that the less privileged are able to participate decision making process. Digital inclusion allows people to develop in different aspects to improve quality of life, enable job creation and promote social freedom.

Also, a study by Pokpas (2014) indicated that in targeting minor compensations significant to a person's life, greater outcomes will accompany. Negative social vices such as alcoholism, drugs and teenage pregnancy can be prevented or changed if we have access to appropriate information and knowledge. DI would help the individual save resources and improve education. The government would also benefit by an increase in productivity and improved health. Businesses and organisations can benefit when employees use internet based applications to work efficiently to increase productivity. Also, the society can benefit by involving the less privileged in social activities thereby reducing social exclusion. Largely the economy would benefit through an increased demand for the ICT industry to be innovative and an increase in competition by attracting investment (Government Digital Service, 2016).

David (2014) stated that promoting ICT diffusion guarantees a wide range of benefits for firm competitiveness and economic growth. Generally having access to ICT through DI improves communication, strengthens democracy, promotes quality education and enhances professional development of teachers, create jobs, improve health and promote self-sufficiency.

2.7 Challenges in the Use of ICT Centres

Harvey (2016) conducted a study on using in youth work. He identified a unique challenge as insufficient understanding of ICT and skills in utilizing digital technology. Report on Finland showed that workers (48%) sensed they lacked competency. Respondents from Austria and Denmark indicated that they don't have adequate information of digital and ICT media. Other challenges were; poor connectivity, insufficient working hours, inadequate of infrastructure and lack of guidelines on how to use ICT. Similarly, Siddiquah and Salim (2017) Siddiquah and Salim (2017) in identifying the ICT facilities, skills, usage and the complications encountered by the students of advanced education found that, internet signal problem, slow speed of computers, virus threat, power outages and lack of internet were challenges students face in using ICTs. Also, students are less skilled in using discussion forums, digital libraries, and blogs.

Furthermore, David (2014) studied the challenges of promoting DI in rural setting by PDC to determine challenges facing PDC in rural places, and the effects of PDC in promoting DI in rural place. The study revealed that computer illiteracy is the main constrain facing the centre. Other challenges were infrastructure, poor internet connectivity, limited products, low level of marketing and awareness. The GLA carried out a research to understand the challenges people face in using ICT, the study revealed that cost, sustainable access to training and lack of interest were the barriers to exclusion (Greater London Authority, 2015). Ibrahim (2018) explored implementation challenges of CIC plan in the GA East Metropolis in the Greater Accra region. The challenges mentioned by the participants were illiteracy and myth, technical

complexity, foreign content, limited mode of delivery, foreign technology and lack of local involvement.

Alam and Imran (2015) surveyed the elements which influenced refugee migrants adopting technology and how important it is to their societal inclusion. The research bring into being that cost-effective disparities and technology were obstacles to accessing and using ICT.

2.8 Summary of Reviewed Literature

From the literature reviewed, it was revealed that public libraries were the initial attempt to increase access to informational resources. The world has become more alert on the important role ICT plays in development; as a result individuals in societies use ICTs to cater for their needs such as, communication, employment and education.

 The effective use of ICT centres is found to largely depend on how accessible, available and how reachable and portable they are to the users who have the requisite skills to access these centres. The use of ICT centres to access digital technology is an important tool for learning, improving quality of life, accessing education, promoting job opportunities and keeping contact with loved ones. Despite these benefits there are challenges such as poor connectivity, insufficient working hours, inadequate infrastructure and poor computer skills.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology describes the methods and procedures that will be used in conducting the research. Research methods involve the forms of data collection, analysis, and interpretation that researchers propose for their studies (Creswell 2014). The methodology covers research design, selection of case, population of the study, sample size, sample technique, data collection instrument, pre-testing and presentation of data analysis.

3.2 Research Design

A research design is the general idea used in conducting a research. The researcher employed a cross-sectional survey design for this study. A cross-sectional survey collects data to draw inferences about a population at one point in time. Also, cross-sectional studies are normally fast, easy and less costly (Sedgwick, 2014). According to Neuman (2014), a survey research uses inscribed questionnaire or interview to collect information on the beliefs, behaviours, and backgrounds of a number of people. Survey research was chosen because the researcher is interested in the opinions of a large group of people on the topic of promoting digital inclusion for residents in Ashanti region.

3.3 Study Area

The research setting includes Adukrom, Asawasi, AIC and ACIC.

3.3.1 Adukrom Community and AIC

The study was conducted in Adukrom and Asawasi, suburbs of Kumasi in the Ashanti Region of Ghana. Adukrom is one of the largest communities within the Asawasi

constituency in the Kumasi Metropolis. Adukrom is a community located in the Asokore Mampong Municipal. Asokore Mampong is the capital of Asokore Mampong Municipality in the Ashanti Region and shares boundaries with Parkoso and Mesuam to the north, Sepe Tinpomu and Adanyasie to the west, Nsenie-Kentinkronu to the east and Ayigya to the south. The Municipality has a population of 304,815. The location of the constituency has made it a destination for migrants from especially the northern part of Ghana. A greater percentage of the people in the Adukrom community are engaged in economic activities such as welding, carpentry, petty trading, dressmaking and running of local restaurants.

AIC was established on 8th March 2016 by the Asokore Mampong Municipal Assembly in the Adukrom community, a suburb of Kumasi in the Ashanti Region of Ghana. The centre is managed by the Asokore Mampong Municipal Assembly and has two staff members. The centre was created to provide training on ICT for school children within the community, to enable people in the community have access to ICT devices and also to provide internet service facilities to the community at a fee. The main aim of the centre is to provide ICT services for public schools within the community for free and at a reduced cost for private schools and people within the community (AIC, 2018).

3.3.2 Asawasi Community and ACIC

Asawasi is one of the largest communities within the Kumasi Metropolis. Asawasi is a community located in the Asokore Mampong Municipal. Asokore Mampong is the capital of Asokore Mampong Municipality in the Ashanti Region and shares boundaries with Parkoso and Mesuam to the north, Sepe Tinpomu and Adanyasie to the west, Nsenie-Kentinkronu to the east and Ayigya to the south. The Municipality has a

population of 304,815. The location of the constituency has made it a destination for migrants from especially the northern part of Ghana. Asawasi is a community with inadequate social amenities or non-existent facilities and high illiteracy rates, unemployment, deprived housing, poor sanitation. A greater percentage of the people in the Asawasi community are engaged in economic activities such as welding, carpentry, petty trading, dressmaking and running of local restaurants.

ACIC was established on 27th August 2013 by the Ghana Investment Fund for GIFEC in the Asawasi community, a suburb of Kumasi in the Ashanti Region of Ghana. The centre is managed by the Asokore Mampong Municipal Assembly and has two staff members. The centre was created to provide avenues for teaching and learning of basic knowledge in ICT for school children, to enable individuals in the community access ICT and also provide internet service to the municipal at a fee. The primary aim of the centre is to serve schools without ICT centres within the catchment area and the secondary aim is to provide training services for people in the community, to be a one stop information centre for the community to enable easy access to information (ACIC, 2018).

3.4 Selection of Case

The research was focused on people of Adukrom and Asawasi communities and the managers in charge of the ICT centres. The researcher decided to use the Adukrom and Asawasi communities because of the ICT centres established by AMMA and GIFEC to serve both communities and the managers were used because they perform individual roles towards the achievement of the resource centres goal. Secondly, an observation and interaction made by the researcher among people of Adukrom and Asawasi

communities revealed that the indigenes of the community have low level of literacy in the use of technology.

3.5 Selection of Subjects

Selection of subjects covers the population, sample size and sampling technique.

3.5.1 Population of the Study

A population is the number of people used for a study. Neuman (2014) stated that a population is the nonfigurative idea of a group of many circumstances from which a researcher draws a sample and to which results from a sample are generalized. The target populations for this study are individuals from the Adukrom and Asawasi community who are between the ages of 15 to 44 years based on the 2010 census. The researcher has decided to use this age group because, it has been proven that people that fall within this age are electronically inclined and they use technology than the other age groups (Olson, O'Brien, Rogers & Charness). The total population of the study is 13,742 individuals from the Adukrom community and 33,517 individuals from the Asawasi community. However the managers in charge of the ICT centres were interviewed. This is because they performed individual roles towards the achievement of the centres goals.

Table 3.1: Population of Individuals in Adukrom and Asawasi

Age Range	Adukrom	Asawasi
15-19	1, 410	1, 308
20-24	3, 106	9, 020
25-29	2, 732	8, 460
30-34	2, 222	5, 969
35-39	2, 362	4, 748
40-44	1, 910	4, 012
Total	13, 742	33, 517

Source: Asokore Mampong Municipal Assembly, 2018

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Table 3.2: Population of Staff of AIC and ACIC

Staff	Adukrom	Asawasi
Manager	1	1

Source: AIC, 2018; ACIC, 2018

3.5.2 Sample Size

A sample observes a quota of the object of which a percentage must be cautiously selected to represent that population (Cooper & Schindler, 2014). The process by which a sample is selected is sampling. Sampling is the procedures used in selecting a representative unit from a population. In determining a sample size, Mugenda and Mugenda (2013), proposed that when the study population is less than 10, 000, a sample size of between 10 and 30% is a good representation of the target population and hence 10 % is adequate for analysis. However, considering the current population in terms of size and geographical area, the researcher decided to use 2% of the total population as the sample size.

Total population of Adukrom and Asawasi = 47, 259

Sample size $= \frac{2}{100} \times 47,259 = 945$

Sample size for Adukrom $= \frac{13,742}{47,259} \times 945 = 275$

Sample size for Asawasi $= \frac{33,517}{47,259} \times 945 = 670$

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Table 3.3: Proportionate Sample Size

Age Range	Adukrom	Asawasi
15- 19	28	26
20-24	62	180
25-29	55	169
30-34	45	120
35-39	47	95
40-44	38	80
Total	**275**	**670**

In addition, the Managers of AIC and ACIC were interviewed to obtain additional information to the information from the questionnaire.

3.5.3 Sampling Technique

According to Creswell, (2014) sampling process is where the researcher has contact with the population and can draw a sample. Convenience sampling method was adopted gather data from individuals within the Adukrom and Asawasi community. Convenience sampling is a non-random sample in which the researcher chooses anyone he or she chances on (Neuman, 2014). The subjects are selected based on how accessible they are to the researcher. The researcher can gather data within a limited time and this technique is also economical.

3.6 Instrumentation

The researcher used a questionnaire as the leading instrument in collecting data from individuals and complemented it with an interview from the managers. LaDou, (2010) cited in Bentil, (2018), states that a questionnaire is a written list of questions, and to be responded by respondents. Questionnaire was appropriate for this study because it is a quicker way of gathering data from large number of people. Questionnaires are easier to administer and facilitates data collection in a short time, they are cost-effective in the

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sense that they can provide considerable amount of research data of a relative low cost. Questionnaires also have an advantage for the respondents, who, instead of needing to think of how to express their ideas, are faced with the relatively easy task of needing to pick one or more answers which are spelt out for them. However it took the researcher a longer period to administer the questionnaire.

The questionnaire included both open-ended and close-ended questions. The open-ended questions had spaces for the respondents to provide their own answers where necessary whiles the closed-ended questions had alternative options which the respondents choose from; this made the respondents work easier and saved time. The questionnaire was made up of seven sections as follows:

Section A: Biographic data

Section B: Awareness of ICT centres

Section C: Extent of use of ICT centres

Section D: Computer literacy skills and use of ICT centres

Section E: ICT centres and digital inclusion

Section F: Perceived benefits of digital inclusion

Section G: Challenges in the use of ICT centres

The researcher also used a semi-structured interview directed by the research questions. This was designed to collect data from the manager of AIC and ACIC. The interview schedule was used to in order to get relevant information from the managers which cannot be obtained from the individuals in the community. The researcher went to the ICT centres personally to conduct a face to face interview with the managers of the ICT centres.

3.7 Pre-Testing

Pre-testing is a method of checking that questions work as intended and are understood by those individuals who are likely to respond to them. The questionnaire designed for data collection was pre-tested in advance before the actual data collection. Cooper and Schindler (2014) stated that the size of the pilot group may range from 25 to 100 subjects. The questionnaire was pre-tested with 50 individuals falling in the age ranges of 15 - 44 from Wurishie community, a suburb of Tamale in the Northern Region of Ghana. The pre-testing was conducted in the Wurishie community because of its similar characteristics to the Adukrom and Asawasi communities. The pre-testing helps in identifying flaws in the design and implementation of data instruments and collection procedures (Cooper & Schindler, 2014). The researcher pre-tested the questionnaire within three (3) days. The researcher and a field assistant approached anyone they met in the community and asked them questions to know whether they fall within the target age group before giving the questionnaires to them. Three questions as piloted proved to be ambiguous and were therefore corrected. The questions for the interview were designed based on the questionnaire.

3.8 Mode of Data Collection

Data was gathered using a questionnaire which was administered to individuals within the Adukrom and Asawasi community and the manager of each centre was interviewed. The researcher sent an introductory letter from the Department of Information Studies, University of Ghana, Legon to the ACIC (See Appendix C) and the AIC (See Appendix D) to introduce the researcher as an MPhil student of the department. The questionnaire was administered within three (3) weeks for the Asawasi community. The researcher and two (2) field assistants approached anyone they met in the community and asked

them questions to know whether they fall within the target age group before giving the questionnaires to them and proceeded to the ACIC to administer some of the questionnaires to those who used the ICT centre each day. The questionnaire was interpreted in the Akan language to those who could not read in English. The researcher waited each day to collect the copies of the questionnaire that have been completed. The manager of the ACIC was interviewed using a semi-structured interview schedule on the last day visit to the community.

After, the researcher moved to the Adukrom community for one (1) week. The researcher and two (2) field assistants approached anyone they met in the community and asked them questions to know whether they fall within the target age group before giving the questionnaires to them and proceeded to the AIC to administer some of the questionnaires to those who used the ICT centre each day. The questionnaire was interpreted in the Akan language to those who could not read in English. The researcher waited each day to collect the copies of the questionnaire that have been completed. The researcher went personally to collect data with the two (2) field assistants; hence there was a high response rate. The manager of the AIC was interviewed using a semi-structured interview schedule on the last day visit to the community.

3.9 Data Analysis

Data analysis is generally conducted to organize and give meaning to the data. Data analysis is an ongoing process during a research which involves analyzing participant information, and researchers typically employ general analysis steps as well as those steps found within a specific design (Creswell, 2014). Data gathered from the questionnaire were assigned codes to make sense out of the responses collated from

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respondents before entering it into the entering it into the software. Data gathered from the questionnaire was analysed using the Statistical Package for Social Sciences (SPSS) version 22. SPSS is software that is used in statistical analysis which includes tables showing frequency, pie charts, bar charts and histograms. Descriptive statistics present, describe and summarize a set of numerical data to accurately define the various aspects of that data set. Inferential part of data analysis draws conclusion from information gathered which is of interest based on a small part of that information. The interview was analysed using thematic content analysis. This is a research method for making similar and valid conclusions from texts of different formats, pictures and audio (White & Marsh, 2006).

3.10 Ethical Considerations

According to Fraenkel and Wallen (2000) all subjects should be assured that any data about them would be kept confidential. Ethics are standards or principles of activities that guides a researcher's conduct and association with others (Ankrah, 2014). The study ensured that all ethical issues concerning participants were adhered to. In reference to this, the researcher took an introductory letter from the Department of Information Studies, to seek permission from the managers of the centres to conduct this study. Secondly, the research partakers were educated about the techniques in the research and their consent was sought for before conducting the research. Also, the student informed the partakers that any information they give out would be confidential. Again, all information to be gathered from literature was duly acknowledged to prevent plagiarism. The University of Ghana code of ethics was employed.

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CHAPTER FOUR

DATA ANAYSIS AND INTERPRETATION

4.1 Introduction

This chapter is made up of the analysis of data gathered from individuals in Adukrom and the Asawasi community as well as the Managers of both centres by using a questionnaire and a semi-structured interview. This chapter is presented in two (2) parts. The first part presented data analysed from copies of the questionnaire and the second part presented data analysed from the interview with the Managers of the ICT centres. The total numbers of questionnaire administered were 945 but eight hundred and ninety eight (898) were fully completed and returned to the researcher hence, was used for the analysis, giving a response rate of 95%.

The analysis was based on the following themes:

1. Demographics

2. Awareness of ICT Centre

3. Extent of Use of ICT Centres

4. Computer Literacy Skills

5. ICT Centres and Digital Inclusion

6. Benefits of Digital Inclusion

7. Challenges in the Use of ICT Centres

4.2 Demographics of Respondents

Demographics in research are defined as the statistical data of a population, such as age, gender, education and religion. With reference to this, respondents were asked to indicate their gender, age, educational level, marital status, employment status, religion and community. Table 4.1 depicts the responses from the respondents.

Table 4.1 Characteristics of Respondents

Demographics		Adukrom		Asawasi	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	132	57.9	425	63.4
	Female	96	42.1	245	36.6
	Total	**228**	**100.0**	**670**	**100.0**
Age	15-19	26	11.4	63	9.4
	20-24	68	29.8	178	26.6
	25-29	81	35.5	176	26.3
	30-34	38	16.7	74	11.0
	35-39	4	1.8	99	14.8
	40-44	11	4.8	80	11.9
	Total	**228**	**100.0**	**670**	**100.0**
Educational Level	Primary	52	22.8	66	9.9
	JHS	72	31.6	81	12.1
	SHS	51	22.4	298	44.5
	Tertiary	38	15.4	198	29.6
	Others	18	7.9	27	4.0
	Total	**228**	**100.0**	**670**	**100.0**
Marital Status	Single	99	43.4	367	54.8
	Married	111	48.7	216	32.2
	Widowed	7	3.1	40	6.0
	Divorced	7	3.1	26	3.9
	Separated	4	1.8	21	3.1
	Total	**228**	**100.0**	**670**	**100.0**
Employment Status	Employed	129	56.6	419	62.5
	Unemployed	99	43.4	251	37.5
	Total	**228**	**100.0**	**670**	**100.0**
Religion	Christianity	114	5.0	66	9.9
	Islamic	108	47.4	598	89.3
	African Traditional Religion	5	2.2	6	0.9
	Others	1	0.4		
	Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From Table 4.1, 132 (57.9%) of respondents from Adukrom were male and 96 (42.1%) were female, whiles 425 (63.4%) of respondents from Asawasi were male and 245 (36.6%) were female. It is clear from the table that, most of the respondents sampled from Adukrom and Asawasi are males.

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From the above table, 26 (11.4%) of respondents from Adukrom fall within the age range of 15-19, 68 (29.8%) fall within the age range of 20-24, 81 (35.5%) fall within the age range of 25-29, 38 (16.7%) fall within the age range of 30-34, 4 (1.8%) fall within the age range of 35-39 and 11 (4.8%) fall within the age range of 40-44. It is obvious from the above table that, majority of the respondents fall within the age range of 25-29. Sixty three (9.4%) of respondents from Asawasi fall within the age range of 15-19, 178 (26.6%) fall within the age range of 20-24, 176 (26.3%) fall within the age range of 25-29, 74 (11.0%) fall within the age range of 30-34, 99 (14.8%) fall within the age range of 35-39 and 80 (11.9%) fall within the age range of 40-44. It is clear from the above table that, majority of the respondents fall within the age range of 20-29. It is obvious from the findings that majority of respondents from both communities fall within the age range of 25-29.

From Table 4.1, 52 (22.8%) of respondents from Adukrom had primary education, 72 (31.6%) of respondents had JHS education, 51 (22.4%) of respondents had SHS education, 38(15.4%) of respondents had tertiary education and 18 (7.9%) indicated O'level. It is obvious that from the table that majority of respondents in Adukrom had primary education. From Table 4.1, 66 (9.9%) of respondents from Asawasi had primary education, 81 (12.1%) of respondents had JHS education, 298 (44.5%) of respondents had SHS education, 198 (29.6%) of respondents had tertiary education and 27 (4.0%) indicated O'level. It is clear from the table that majority of respondents in Asawasi had SHS education. The findings indicates that majority of respondents from Adukrom had primary and JHS education whiles majority of respondents in Asawasi had SHS education.

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From the table above, 99 (43.4%) of respondents from Adukrom were single, 111 (48.7%) of respondents were married, 7 (3.1%) of respondents were widowed, 7 (3.1%) of respondents were divorced and 4 (1.8%) were separated. However, majority of respondents in Adukrom were married. Three hundred and sixty seven (54.8%) of respondents from Asawasi were single, 216 (32.2%) of respondents were married, 40 (6.0%) of respondents were widowed, 26 (3.9%) of respondents were divorced and 21(3.1%) were separated. However, majority of respondents in Asawasi were single. It is clear from the findings that majority of respondents in Adukrom were married whiles majority of respondents from Asawasi were single.

From Table 4.1, 129 (56.6%) of respondents from Adukrom were employed and 99 (43.4%) were unemployed whiles 419 (62.5%) of respondents from Asawasi were employed and 251 (37.5%) were unemployed. It is obvious from the table that, most respondents from both communities are employed.

From the table above, 114 (50.0%) of respondents from Adukrom were Christians, 108 (47.4%) were Muslims, 5 (2.2%) indicated ATR and 1 (0.4%) indicated Atheism. Most respondents from Adukrom were Christians. Sixty six (9.9%) of respondents from Asawasi were Christians, 598 (89.0%) were Muslims and 6 (0.9%) indicated ATR. Most respondents from Asawasi were Muslims. The findings indicate that most respondents from Adukrom were Christians whiles most respondents from Asawasi were Muslims. Digital divides cut across gender, geography (rural/urban), age, education and income dimensions within each country (Herbert, 2017).

4.3 Awareness of ICT Centre

Awareness is a state of having knowledge about a particular subject or thing. Therefore, awareness of ICT centre is having knowledge about the existence of an ICT centre. There are two main types of awareness namely: self-awareness and covert awareness. This section analysed data on individual awareness of the ICT centre, channels of awareness and services provided by the ICT centre.

4.3.1 Individual Awareness of the ICT Centres

Individual awareness of ICT centre is when an individual have knowledge about the existence of an ICT centre. Based on this background, respondents were asked whether they were aware of the ICT centre in their community. From the data analysed, all respondents from both Adukrom and Asawasi answered that, they were aware of the existence of the ICT centre.

4.3.2 Channels of Awareness

Channel is a medium through which information is conveyed. Channels of awareness include face to face, broadcast media, mobile, electronic and written communication. Upon this background, respondents were asked to indicate how they became aware of the ICT centre in their community. Table 4.2 shows the responses from respondents.

Table 4.2: Channels of Awareness of the ICT Centre

Channels of Awareness	Adukrom		Asawasi	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Radio	65	28.5	34	5.1
Television	88	38.6	63	9.4
Friends	67	29.4	554	82.7
Others	8	3.5	19	2.8
Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

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From Table 4.2, according to the respondents from Adukrom community 65 (28.5%) became aware through radio, 88 (38.6%) through television, 67 (29.4%) through friends and 8 (3.5%) indicated community training, internship and strolling. It is obvious from the table that most respondents in Adukrom became aware of the ICT centre through television. Thirty four (5.1%) of the respondents from Asawasi community indicated that they became aware through radio, 63 (9.4%) through television, 554 (82.7%) through friends and 19 (2.8%) indicated community training and strolling. It is clear from the table that most respondents from Asawasi became aware of the ICT centre through friends. Whiles most of the respondents from Adukrom became aware of the ICT centre through television, most respondents from Asawasi became aware of the ICT centre through friends.

4.3.3 Services Provided by the ICT Centres

Services can be termed as the action of helping or doing work for someone. Services available to any ICT centre could be hardware maintenance, training, data recovery and online registration. Respondents were therefore asked to indicate the services provided by the ICT centre in their community. Their responses are presented in the table below.

Table 4.3: Services Provided by the AIC and ACIC

Service	Adukrom		Asawasi	
	Yes (%)	No (%)	Yes (%)	No (%)
Photocopying	0.0	100.0	69.1	30.9
Printing	0.0	100.0	69.1	30.9
Typing	43.0	57.0	69.1	30.9
Scanning	0.0	100.0	69.1	30.9
Training	43.0	57.0	69.1	30.9
Job Coaching for Students	43.0	57.0	69.1	30.9
Internet Service	0.0	100.0	0.0	100.0
Wireless Service	0.0	100.0	0.0	100.0

Source: Field Data, 2019

From the table above, all respondents from Adukrom 228 (100%) indicated that photocopying was not available 228 (100%) indicated that printing was not available, 98 (43.0%) indicated that typing was available whiles 130 (57.0%) indicated that typing was not available, 228 (100%) indicated that scanning was not available, 98 (43.0%) indicated that training was available whiles 130 (57.0%) indicated that training was not available, (43.0%) indicated that job coaching was available whiles 130 (57.0%) indicated that job coaching was not available, 228 (100%) indicated that internet service was not available and 228(100%) also indicated that wireless was not available. It is clear from the table that typing, training and job coaching for students was available at the AIC.

Four hundred and sixty three (69.I %) of respondents from Asawasi indicated that photocopying was available whiles 207 (30.9%) indicated that photocopying was not available, 463 (69.I %) of respondents from Asawasi indicated that printing was available whiles 207 (30.9%) indicated that printing was not available,463 (69.I %) of respondents from Asawasi indicated that typing was available whiles 207 (30.9%) indicated that typing was not available, 463 (69.I %) of respondents from Asawasi indicated that scanning was available whiles 207 (30.9%) indicated that scanning was not available,463 (69.I %) of respondents from Asawasi indicated that training was available whiles 207 (30.9%) indicated that training was not available, 463 (69.I %) of respondents from Asawasi indicated that job coaching was available whiles 207 (30.9%) indicated that job coaching was not available, 670 (100%) indicated that internet service was not available and 670 (100%) also indicated that wireless service was not available. It is obvious from the table that photocopying, printing, typing, scanning, training and job coaching for students was available at the ACIC. This is an

indication that typing, training and job coaching for students was available at the AIC whiles photocopying, printing, typing, scanning, training and job coaching for students was available at the ACIC.

4.4 Extent of Use of ICT Centres

Extent is the area covered by something. Therefore, the extent of use of ICT centres is the intensity or frequency or diversity of purpose of ICT centres. This part analysed responses on frequency of use of the ICT centre, usage of ICT centre, use of the ICT centre, purpose of use of the ICT centre and devices in the ICT centre.

4.4.1 Frequency of Use of the ICT Centre

Frequency is the rate at which something occurs over a particular period of time. Frequency of use of an ICT centre is basically how often an ICT centre is used. Based on this background respondents were asked to indicate how often they use the ICT centre in their community. Their responses are depicted in Table 4.4.

Table 4.4: Frequency of Use of the AIC and ACIC

Frequency	Adukrom		Asawasi	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Always	9	3.9	107	16.0
Very often	21	9.2	199	29.7
Sometimes	11	4.8	131	19.6
Rarely	57	25.0	26	3.9
Never	130	57.0	207	30.9
Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From Table 4.4, 9 (3.9%) of the respondents in Adukrom used the ICT centre always, 21 (9.2%) used the centre very often, 11 (4.8%) used the centre sometimes, 57 (25.0%) rarely used the centre and 130 (57.0%) respondents never used the centre. It is clear from the table that majority of respondents in Adukrom do not use the ICT centre. One hundred and seven (16.0%) of the respondents in Asawasi used the ICT centre always, 199 (29.7%) used the centre very often, 131 (19.6%) used the centre sometimes, 26 (3.9%) rarely used the centre and 207 (30.9%) respondents never used the centre. It is obvious from the table that majority of respondents in Asawasi do not use the ICT centre. This is an indication that even though individuals in both communities were aware of the ICT centres they did not use the centres.

4.4.2 Usage of ICT Centre by Respondent

The use of ICT centres plays an important role in promoting digital inclusion, it is important to find out how often individuals use ICT centres. Therefore respondents were asked to indicate how long they have been using the ICT centre in their community. Figure 4.1 represents their responses.

Figure 4.1: Period of Usage of ICT Centre
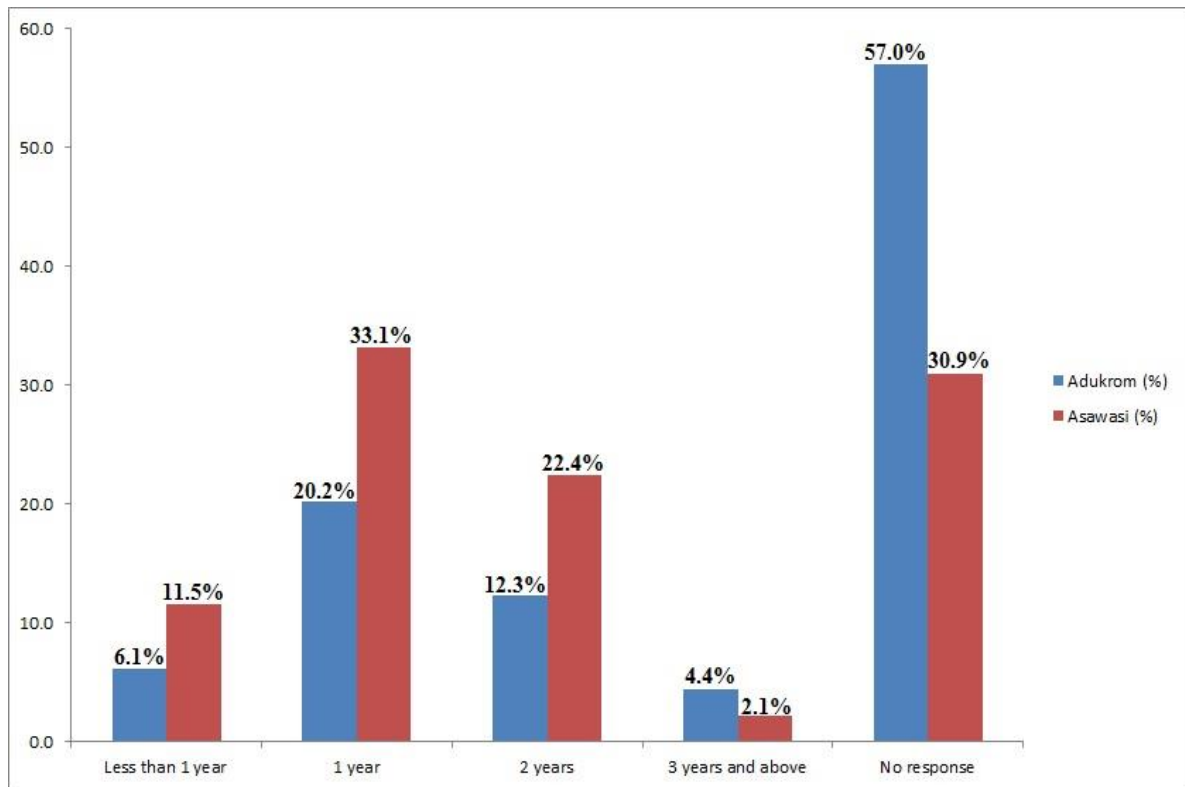
Source: Field Data, 2019

As shown in Figure 4.1, 14 (6.1%) of respondents in Adukrom indicated that they had used the centre for less than 1 year, 46 (20.2%) had used the centre for 1 year, 28 (12.3%) had used the centre for 2 years, 10 (4.4%) had used the centre for 3 years and above and 130 (57.0%) gave no response. It is clear from the figure that most respondents gave no response to the question because they had indicated earlier that even though they were aware of the centre, they did not use it. Seventy seven (11.5%) of respondents in Asawasi indicated that they had used the centre for less than 1 year, 222 (33.1%) had used the centre for 1 year, 150 (22.4%) had used the centre for 2 years, 14 (2.1%) had used the centre for 3 years and above and 207 (30.9%) gave no response. It is obvious from the figure that majority of respondents had used the centre for 1 year.

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This is an indication that most respondents from Adukrom do not use the ICT centre whiles most respondents from Asawasi had used the centre for 1 year.

4.4.3 Use of the ICT Centre

Use means to put something such as a skill, tool or building to a particular purpose. Use of ICT centre means to put an ICT centre to a particular purpose. Respondents were therefore asked to indicate their reasons for using the ICT centre in their community. Figure 4.2 depicts their responses.

Figure 4.2: Reasons for Use of the ICT Centre
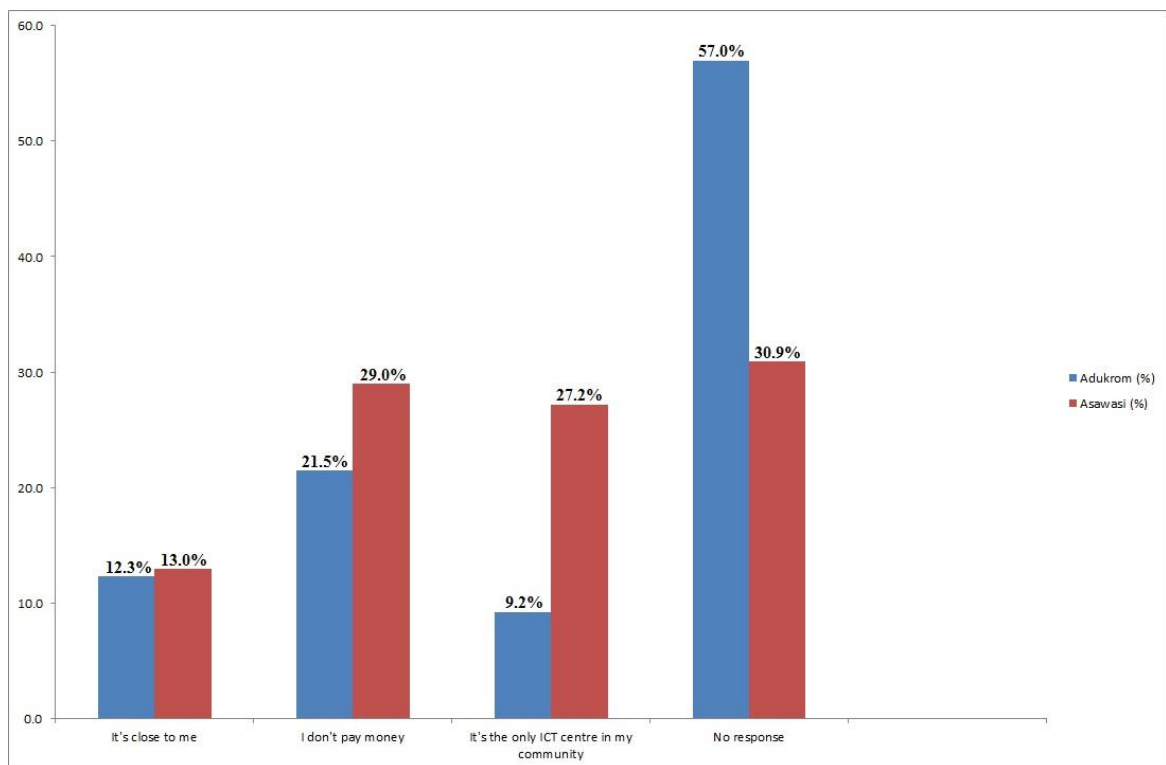
Source: Field Data, 2019

Twenty eight 28 (12.3%) of respondents in Adukrom used the centre because it was close to them, 49 (21.5%) used the centre because they don't pay money, 21 (9.2%) used the centre because it is the only ICT centre in the community, 130 (57.0%) gave

no response and others also added that they used the ICT centre to teach their students ICT practical. It is clear that most respondents gave no response to the question because they had indicated earlier that even though they were aware of the centre, they did not use it. Eighty seven (13.0%) of respondents in Asawasi used the ICT centre because it was close to them, 194 (29.0%) used the centre because they don't pay money, 182 (27.2%) used the centre because it is the only ICT centre in the community, 207 (30.9%) gave no response and others also added that they used the ICT centre to teach their students ICT practical. It is obvious that most respondents gave no response to the question because they had indicated earlier that even though they were aware of the centre, they did not use it. Majority of respondents from both communities gave no response to the question because they had indicated earlier that even though they were aware of the centre, they did not use it.

4.4.4 Purpose of Use of the ICT Centre

Purpose is the reason for which something is done. ICT centres could be used for academic, recreational and other purposes. In relation to this, respondents were asked to indicate what they used the ICT centre for. Figure 4.3 indicates their responses.

Figure 4.3: Purpose of Use of the ICT Centre
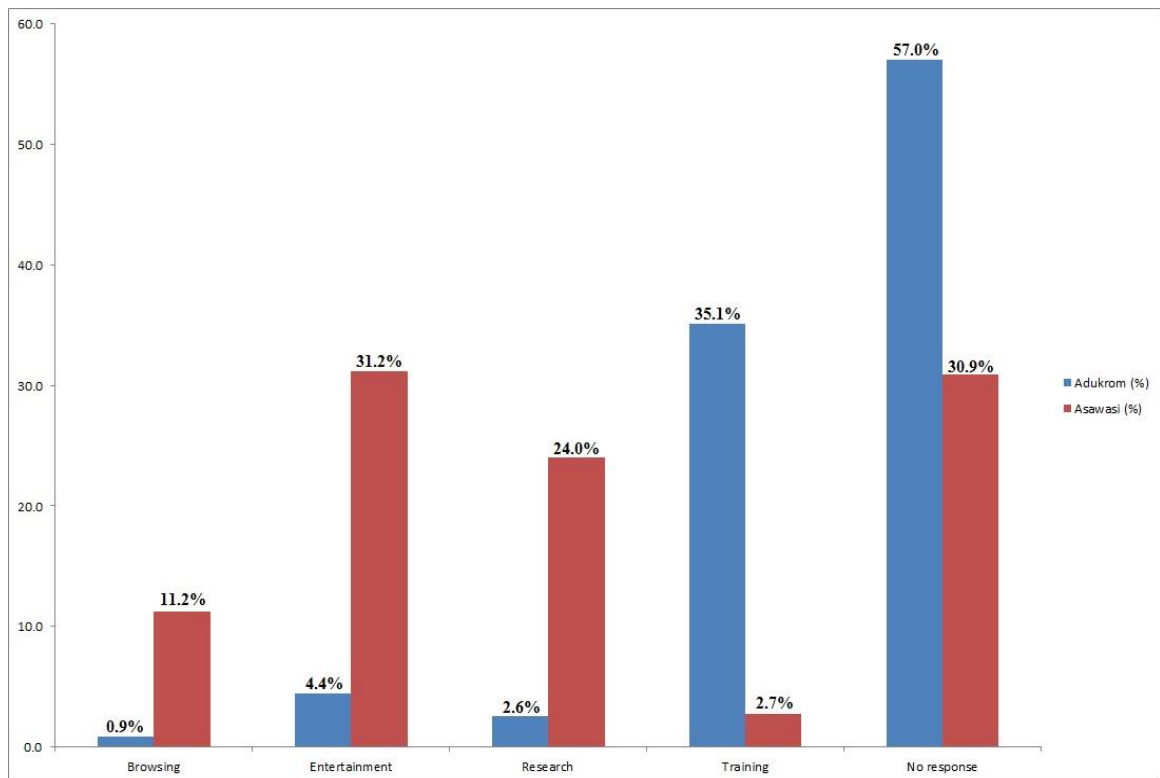
Source: Field Data, 2019

From Figure 4.4, 2 (0.9%) respondents from Adukrom used the ICT centre for browsing, 10 (4.4%) used the centre for entertainment, 6 (2.6%) used the centre for research, 80 (35.1%) used the centre for training, 130 (57.0%) gave no response and others also added that they used the centre for printing, photocopying and teaching. From the figure, it is clear that most respondents gave no response to the question because they had indicated earlier that even though they were aware of the centre, they did not use it. Seventy five (11.2%) of respondents from Asawasi used the ICT centre for browsing, 209 (31.2%) used the centre for entertainment, 161 (24.0%) used the centre for research, 18 (2.7%) used the centre for training, 207 (30.9%) gave no response. From the figure, it is clear that most respondents used the ICT centre for entertainment. The findings revealed that most respondents from Adukrom did not use

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the ICT centre whiles most respondents from Adukrom did not use the ICT centre whiles most respondents used the ICT centre for entertainment

4.4.5 Devices in the ICT Centre

A device is an object that has been invented for a particular purpose. A device could be a scanner, projector, photocopier, printer and desktop computer. With reference to this, respondents were asked to indicate the ICT devices which are available or not available in the ICT centre in their community. Their responses are presented in Table 4.5.

Table 4.5: Devices in the AIC and ACIC

Devices	Adukrom		Asawasi	
	Yes (%)	No (%)	Yes (%)	No (%)
Desktop computer/Laptop	43.0	57.0	69.1	30.9
Scanner	0.0	100.0	69.1	30.9
Printer	0.0	100.0	69.1	30.9
Photocopier	0.0	100.0	69.1	30.9
Projector	0.0	100.0	69.1	30.9
E-White Board	0.0	100.0	0.0	100.0
Webcam	0.0	100.0	0.0	100.0
Headset	0.0	100.0	0.0	100.0
Multifunctional Devices	0.0	100.0	0.0	100.0
Tablet	0.0	100.0	0.0	100.0

Source: Field Data, 2019

From the table above, 98 (43.0%) of respondents from Adukrom indicated that desktop computer and laptop was available whiles 130 (57.0%) indicated that computer and laptop was not available, 228 (100%) indicated that scanner was not available, 228 (100%) indicated that printer was not available, 228 (100%) indicated that photocopier was not available, 228 (100%) indicated that projector was not available, 228 (100%) indicated that e-white board was not available, 228 (100%) indicated that webcam was not available, 228 (100%) indicated that headset was not available, 228 (100%)

indicated that multifunctional devices was not available and 228 (100%) also indicated that tablet was not available. It is obvious from the table that desktop computer and laptop was the only ICT device available at the AIC.

Four hundred and sixty three (69.I %) of respondents from Asawasi indicated that desktop computer and laptop was available whiles 207 (30.9%) indicated that desktop computer and laptop was not available, 463 (69.I %) of respondents from Asawasi indicated that scanner was available whiles 207 (30.9%) indicated that scanner was not available, 463 (69.I %) of respondents from Asawasi indicated that printer was available whiles 207 (30.9%) indicated that printer was not available, 463 (69.I %) of respondents from Asawasi indicated that photocopier was available whiles 207 (30.9%) indicated that photocopier was not available, 463 (69.I %) of respondents from Asawasi indicated that projector was available whiles 207 (30.9%) indicated that projector was not available, 670 (100%) indicated that e-white board was not available, 670 (100%) indicated that webcam was not available, 670 (100%) indicated that headset was not available, 670 (100%) indicated that multifunctional devices was not available and 670 (100%) also indicated that tablet was not available. It is clear from the table that desktop computer and laptop, scanner, printer, photocopier and projector were the ICT devices available at the ACIC. The findings revealed that desktop computer and laptop was the only ICT device available at the AIC whiles desktop computer and laptop, scanner, printer, photocopier and projector were the ICT devices available at the ACIC.

4.5 Computer Literacy Skills

Computer literacy skills is the ability to use a computer such as knowing how to boot a computer, logging in, use the keyboard and mouse, access software and the internet.

This section analysed respondents level of computer literacy, computer skills of respondents, IT devices and computer literacy skills and use of ICT centres.

4.5.1 Level of Computer Literacy

Computer literacy is defined as the knowledge and ability to use computers and it related technology efficiently. Respondents were therefore asked to indicate their level of computer literacy as shown in Figure 4.4.

Figure 4.4: Level of Computer Literacy of Respondents
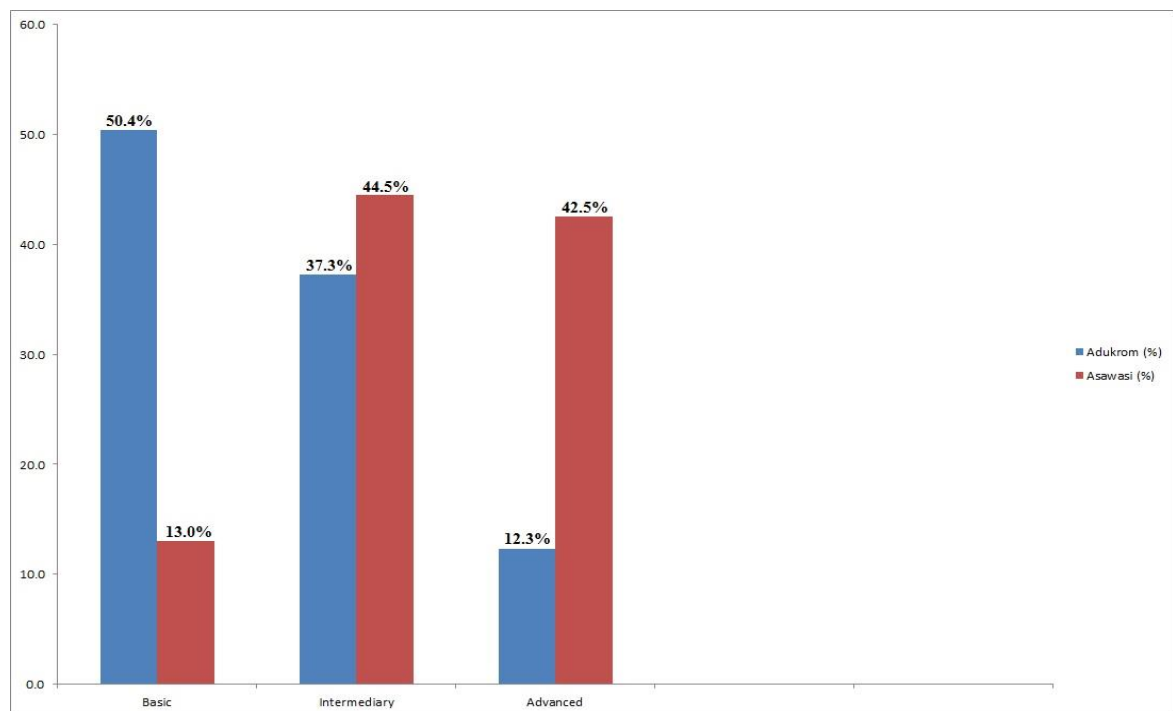
Source: Field Data, 2019

As shown in Figure 4.4, 115 (50.4%) of respondents from Adukrom indicated their level of computer literacy as basic, 85 (37.3%) indicated their level of computer literacy as intermediary and 28 (12.3%) indicated their level of computer literacy as Advanced. It is clear from the figure that majority of respondents have basic level of computer literacy. Eighty seven (13.0%) of respondents in Asawasi indicated their level of

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computer literacy as basic, 298 (44.5%) indicated their level of computer literacy as intermediary and 285 (42.2%) indicated their level of computer literacy as Advanced. It is obvious from the figure that majority of respondents have intermediary level of computer literacy. Whiles respondents from Adukrom have a basic level of computer literacy; respondents from Asawasi have intermediary level of computer literacy.

4.5.2 Computer Skills of Respondents

Computer skills are important in order to utilize computers and related technology effectively. In order to find out individual computer skills, respondents were asked to indicate their level of knowledge in some selected computer skills. This is presented in the table below.

Table 4.6: Computer Skills of Respondents in Adukrom and Asawasi

Computer Skills	Rating	Adukrom		Asawasi	
		Frequency	Percentage	Frequency	Percentage
Typing	Excellent	21	9.2	117	17.5
	Good	88	38.6	269	40.1
	Fair	114	50.0	231	34.5
	Poor	5	2.2	53	7.9
	Total	**228**	**100.0**	**670**	**100.0**
MS Word	Excellent	81	35.5	120	17.9
	Good	108	47.4	274	40.9
	Fair	15	6.6	214	31.9
	Poor	24	10.5	62	9.3
	Total	**228**	**100.0**	**670**	**100.0**
MS Excel	Excellent	81	35.5	122	18.2
	Good	72	31.6	243	36.3
	Fair	28	12.3	219	32.7
	Poor	47	20.6	86	12.8
	Total	**228**	**100.0**	**670**	**100.0**
MS Power Point	Excellent	76	33.3	120	17.9
	Good	87	38.2	213	31.8
	Fair	35	15.4	273	40.7
	Poor	30	13.2	64	9.6
	Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From the table above, 21 (9.2%) of respondents from Adukrom indicated their level of knowledge in typing as excellent, 88(38.6%) indicated their level of knowledge in typing as good, 114 (50.0%) indicated their level of knowledge in typing as fair and 5 (2.2%) indicated their level of knowledge in typing as poor. Majority of respondents from Adukrom indicated their level of knowledge in typing as fair. Eighty one (35.5%) indicated their level of knowledge in MS word as excellent, 108 (47.4%) indicated their level of knowledge in MS word as good, 15 (6.6%) indicated their level of knowledge in MS word as fair and 24 (10.5%) indicated their level of knowledge in MS word as poor. Majority of respondents from Adukrom indicated their level of knowledge in MS word as good.

Eighty one (35.5%) indicated their level of knowledge in MS excel as excellent, 72 (31.6%) indicated their level of knowledge in MS excel as good, 28 (12.3%) indicated their level of knowledge in MS excel as fair and 47 (20.6%) indicated their level of knowledge in MS excel as poor. Majority of respondents from Adukrom indicated their level of knowledge in MS excel as excellent. Seventy six (33.3%) indicated their level of knowledge in MS power point as excellent, 87 (38.2%) indicated their level of knowledge in MS power point as good, 35 (15.4%) indicated their level of knowledge in MS power point as fair and 30 (13.2%) indicated their level of knowledge in MS power point as poor. Others also added that they had skills in hardware and networking. Majority of respondents from Adukrom indicated their level of knowledge in MS power point as good.

One hundred and seventeen (17.5%) of respondents from Asawasi indicated their level of knowledge in typing as excellent, 269 (40.1%) indicated their level of knowledge in

typing as good, 231 (34.5%) indicated their level of knowledge in typing as fair and 53 (7.9%) indicated their level of knowledge in typing as poor. Majority of respondents from Asawasi indicated their level of knowledge in typing as good. One hundred and twenty (17.9%) indicated their level of knowledge in MS word as excellent, 274 (40.9%) indicated their level of knowledge in MS word as good, 214 (31.9%) indicated their level of knowledge in MS word as fair and 62 (9.3%) indicated their level of knowledge in MS word as poor. Majority of respondents from Asawasi indicated their level of knowledge in MS word as good.

One hundred and twenty two (18.2%) indicated their level of knowledge in MS excel as excellent, 243 (36.3%) indicated their level of knowledge in MS excel as good, 219 (32.7%) indicated their level of knowledge in MS excel as fair and 86 (12.8%) indicated their level of knowledge in MS excel as poor. Majority of respondents from Asawasi indicated their level of knowledge in MS excel as good. One hundred and twenty (17.9%) indicated their level of knowledge in MS power point as excellent, 213 (31.8%) indicated their level of knowledge in MS power point as good, 273 (40.7%) indicated their level of knowledge in MS power point as fair and 64 (9.6%) indicated their level of knowledge in MS power point as poor. Others also added that they had skills in hardware and networking (Cisco), programming in Java, C++, HTML, CSS, word press. Majority of respondents from Asawasi indicated their level of knowledge in MS power point as fair. The findings revealed that most respondents in Adukrom indicated their level of knowledge as typing; fair, MS word; good, MS excel; excellent and MS power point; good whiles most respondents in Asawasi indicated their level of knowledge as typing; good, MS word; good, MS excel; good and MS power point; fair.

4.5.3 IT Devices

An IT device could be any component or machine that can be used access IT related services. Respondents were asked to indicate the digital devices they had. Their responses are indicated in the table below.

Table 4.7: IT Devices of Respondents

Devices	Adukrom		Asawasi	
	Yes (%)	No (%)	Yes (%)	No (%)
Desktop computer	4.4	95.6	28.1	71.9
Smart Phone	72.4	27.6	91.9	8.1
PC Tablet	24.6	75.4	24.3	75.7
Laptop	53.9	46.1	68.1	31.9

Source: Field Data, 2019

From the table above, 10 (4.4%) of respondents from Adukrom indicated that they had desktop computer whiles 218 (95.6%) indicated that they do not, 165 (72.4%) of respondents indicated that they had smart phones whiles 63 (27.6%) indicated that they do not, 56 (24.6%) of respondents indicated that they had PC tablet whiles 172 (75.4%) indicated that they do not and 123 (53.9%) of respondents indicated that they had laptop whiles 105 (46.1%) indicated that they do not. It is clear from the table that most respondents in Adukrom had smart phones. One hundred and eighteen (28.1%) of respondents from Asawasi indicated that they had desktop computer whiles 482 (71.9%) indicated that they do not, 616 (91.9%) of respondents indicated that they had smart phones whiles 54 (8.1%) indicated that they do not, 163 (24.3%) of respondents indicated that they had PC tablet whiles 507 (75.7%) indicated that they do not and 456 (68.1%) of respondents indicated that they had laptop whiles 214 (31.9%) indicated that they do not. It is clear from the table that most respondents in Asawasi had smart

phones. The findings revealed that most individuals in Adukrom and Asawasi had smart phones.

4.5.4 Computer Literacy Skills and Use of ICT Centres

Computer Literacy Skills and use of ICT centres is to find out if computer literacy skill is a prerequisite in the use of ICT centres. Respondents were therefore asked to indicate whether computer literacy skills are important in the use of ICT centres. Their responses are shown in Figure 4:5.

Figure 4.5: Responses on Computer Literacy Skills and Use of ICT Centres
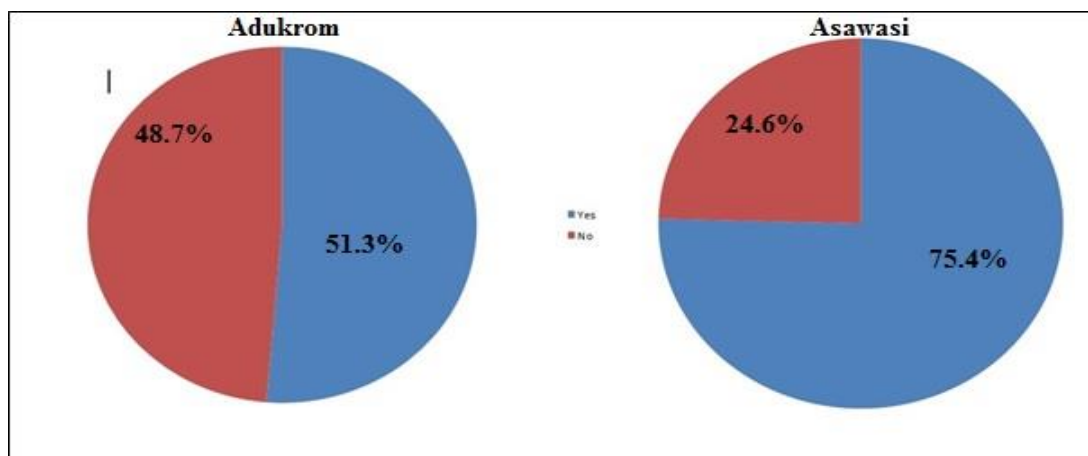
Source: Field Data, 2019

From figure 4.5, 117 (51.3%) of respondents from Adukrom indicated that computer literacy skills was important in the use of ICT centres and 111 (48.7%) said computer literacy skills was not important in the use of ICT centres. It is clear that majority of respondents in Adukrom indicated that computer literacy skills was important in the use of ICT centres. Five hundred and five (75.0%) of respondents from Asawasi indicated that computer literacy skills was important in use of ICT centres and 165 (24.6%) said computer literacy skills was not important in the use of ICT centres. It is obvious that

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majority of respondents in Asawasi indicated that computer literacy skills was important in the use of ICT centres. The findings revealed that respondents from both communities agree that computer literacy skills are important in use ICT centres. According to Deen-Swarray (2016), there is an increase in adoption and use of ICT centres when e-skills literacy is present.

Respondents from both communities who indicated that a computer literacy skill was important in the use of ICT centres gave reasons such as; it gives basic understanding to the use of software and IT applications, it enables one to know how to boot the computer or laptop, one is able to use MS office, it helps the user to navigate and perform tasks on the computers easily because it provide the knowledge on computer usage, without computer skill one cannot do any work, it helps in using the computer without any difficulty, it helps in having more knowledge especially for the beginners, without computer literacy a person will be redundant and of no use in the ICT centre and it helps one to use the centre with ease by facilitating research on a particular topic.

4.6 ICT Centres and Digital Inclusion

DI is defined as the ability of individuals to access and use ICTs. ICT centres could promote digital inclusion by providing community training, access to computers and technical support. This section analysed responses on ICT centres and digital inclusion in the Adukrom and Asawasi communities, promotion of services and quality of services provided by the ICT centres.

4.6.1 The Role of ICT Centres in Promoting DI in the Adukrom and Asawasi

DI means empowering people through ICTs. DI activities are designed to promote ICT accessibility and use. Respondents were therefore asked to indicate the extent to which they agreed or disagreed on how ICT centres promote digital inclusion. Their responses are presented in Table 4.8.

Table 4.8: The Role of ICT Centres in Promoting Digital Inclusion

Digital Inclusion	Agreement	Adukrom		Asawasi	
		Frequency	Percentage	Frequency	Percentage
Free community based computer training	Strongly Agree	206	90.4	634	94.6
	Agree	22	9.6	36	5.4
	Total	**228**	**100.0**	**670**	**100.0**
Free access to PCs and internet	Strongly Agree	60	26.3	77	11.5
	Agree	43	18.9	280	41.8
	Neutral	42	18.4	122	18.2
	Disagree	51	22.4	98	14.6
	Strongly Disagree	32	14.0	93	13.9
	Total	**228**	**100.0**	**670**	**100.0**
Technical Support	Strongly Agree	20	8.8	56	8.4
	Agree	43	18.9	276	41.2
	Neutral	84	36.8	171	25.5
	Disagree	55	24.1	105	15.7
	Strongly Disagree	26	11.4	62	9.3
	Total	**228**	**100.0**	**670**	**100.0**
Free/low cost digital literacy courses	Strongly Agree	173	75.9	541	80.7
	Agree	25	11.0	46	6.9
	Neutral	26	11.4	78	11.6
	Disagree	4	1.8	5	0.7
	Total	**228**	**100.0**	**670**	**100.0**
Shared Wi-Fi or internet access from Local Area Network	Strongly Agree	94	41.2	396	59.1
	Agree	79	34.6	164	24.5
	Neutral	43	18.9	98	14.6
	Disagree	12	5.3	12	1.8
	Total	**228**	**100.0**	**670**	**100.0**
Free or low cost access	Strongly Agree	74	32.5	298	44.5
	Agree	58	25.4	107	16.0

to ICT services and e-resources	Neutral	80	35.1	114	21.5
	Disagree	8	3.5	109	15.3
	Strongly Disagree	8	3.5	12	1.8
	Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From Table 4.8, 206 (90.4%) of respondents from Adukrom strongly agreed that the AIC should promote DI by organising free community based computer training and 22 (9.6%) agreed that the AIC should promote DI by organising free community based computer training. It is clear from the table that that majority of respondents strongly agreed that the AIC should promote DI by organising free community based computer training.

Sixty (26.3%) of respondents from Adukrom strongly agreed that the AIC should promote DI by providing free access to PCs and internet, 43 (18.9%) agreed that the AIC should promote DI by providing free access to PCs and internet, 42 (18.4%) were neutral that the AIC should promote DI by providing free access to PCs and internet, 51 (22.4%) disagreed that the AIC should promote DI by providing free access to PCs and internet and 32 (14.0%) strongly disagreed that the AIC should promote DI by providing free access to PCs and internet. It is obvious from the table that most of the respondents strongly agreed that the AIC should promote DI by providing free access to PCs and internet.

Twenty (8.8%) of respondents from Adukrom strongly agreed that the AIC should promote DI by providing technical support, 43(18.9 %) agreed that the AIC should promote DI by providing technical support, 84 (36.8%) were neutral that the AIC should promote DI by providing technical support, 55 (24.1%) disagreed that the AIC

should promote DI by providing technical support and 26 (11.4%) strongly disagreed that the AIC should promote DI by providing technical support. It is clear from the table that majority of respondents strongly agreed that the AIC should promote DI by providing technical support.

One hundred and seventy three (75.9%) of respondents from Adukrom strongly agreed that the AIC should promote DI by providing free or low cost digital literacy courses, 25 (11.0%) agreed that the AIC should promote DI by providing free or low cost digital literacy courses, 26 (11.4%) were neutral that the AIC should promote DI by providing free or low cost digital literacy courses and 4(1.8%) disagreed that the AIC should promote DI by providing free or low cost digital literacy courses. It is obvious from the table that most of the respondents strongly agreed that the AIC should promote DI by providing free or low cost digital literacy courses.

Ninety four (41.2%) of respondents from Adukrom strongly agreed that the AIC should promote DI by providing shared Wi-Fi or internet access from LAN, 79 (34.6%) agreed that the AIC should promote DI by providing shared Wi-Fi or internet access from LAN, 43 (18.9%) were neutral that the AIC should promote DI by providing shared Wi-Fi or internet access from LAN and 12 (5.3%) disagreed that the AIC should promote DI by providing shared Wi-Fi or internet access from LAN. It is clear from the table that majority of respondents strongly agreed that the AIC should promote DI by providing shared Wi-Fi or internet access from LAN.

Seventy four (32.5%) of respondents from Adukrom strongly agreed that the AIC should promote DI by providing free or low cost access to ICT services and e-

resources, 58 (25.4%) agreed that the AIC should promote DI by providing free or low cost access to ICT services and e-resources, 80 (35.1%) were neutral that the AIC should promote DI by providing free or low cost access to ICT services and e-resources, 8 (3.5%) disagreed that the AIC should promote DI by providing free or low cost access to ICT services and e-resources t and 8 (3.5%) strongly disagreed that the AIC should promote DI by providing free or low cost access to ICT services and e-resources. It is obvious from the table that most of the respondents were neutral that the AIC should promote DI by providing free or low cost access to ICT services and e-resources.

From Table 4.8, 634 (94.6%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by organising free community based computer training and 36 (5.4%) agreed that the ACIC should promote DI by organising free community based computer training. It is clear from the table that that majority of respondents strongly agreed that the ACIC should promote DI by organising free community based computer training.

Seventy seven (11.5%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by providing free access to PCs and internet, 280 (41.8%) agreed that the ACIC should promote DI by providing free access to PCs and internet, 122 (18.2%) were neutral that the ACIC should promote DI by providing free access to PCs and internet, 98 (14.6%) disagreed that the ACIC should promote DI by providing free access to PCs and internet and 93 (13.9%) strongly disagreed that the ACIC should promote DI by providing free access to PCs and internet. It is obvious from the table

that most of the respondents agreed that the ACIC should promote DI by providing free access to PCs and internet.

Fifty six (8.8%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by providing technical support, 276 (41.2%) agreed that the ACIC should promote DI by providing technical support, 171 (25.5%) were neutral that the ACIC should promote DI by providing technical support, 105 (15.7%) disagreed that the ACIC should promote DI by providing technical support and 62 (9.3%) strongly disagreed that the ACIC should promote DI by providing technical support. It is clear from the table that majority of respondents agreed that the ACIC should promote DI by providing technical support.

Five hundred and forty one (80.7%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by providing free or low cost digital literacy courses, 46 (6.9%) agreed that the ACIC should promote DI by providing free or low cost digital literacy courses, 78 (11.6%) were neutral that the ACIC should promote DI by providing free or low cost digital literacy courses and 5 (0.7%) disagreed that the ACIC should promote DI by providing free or low cost digital literacy courses. It is obvious from the table that most of the respondents strongly agreed that the ACIC should promote DI by providing free or low cost digital literacy courses.

Three hundred and ninety six (59.1%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by providing shared Wi-Fi or internet access from LAN, 164 (24.5%) agreed that the ACIC should promote DI by providing shared Wi-Fi or internet access from LAN, 98 (14.6%) were neutral that the ACIC should promote DI

by providing shared Wi-Fi or internet access from LAN and 12 (1.8%) disagreed that the ACIC should promote DI by providing shared Wi-Fi or internet access from LAN. It is clear from the table that majority of respondents strongly agreed that the ACIC should promote DI by providing shared Wi-Fi or internet access from LAN.

Two hundred and ninety eight (44.5%) of respondents from Asawasi strongly agreed that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources, 170 (16.0%) agreed that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources, 114 (21.5%) were neutral that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources, 109 (15.3%) disagreed that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources t and 12 (1.8%) strongly disagreed that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources. It is obvious from the table that most of the respondents strongly agreed that the ACIC should promote DI by providing free or low cost access to ICT services and e-resources.

The findings revealed that majority of the respondents from Adukrom and Asawasi strongly agreed that free community based computer training should be promoted. Also, majority of the respondents from Adukrom strongly agreed that free access to PC s and internet should be promoted whiles majority of respondents from Asawasi agreed that free access to PC s and internet. Again, most of the respondents from Adukrom were neutral that technical support should be promoted whiles most of the respondents from Asawasi agreed that technical support should be promoted. Furthermore, majority of the respondents from Adukrom and Asawasi strongly agreed that free or low cost digital

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literacy courses should be promoted. More so, most of the respondents from Adukrom and Asawasi strongly agreed that shared Wi-Fi or internet access from LAN should be promoted. Additionally, majority of the respondents from Adukrom and Asawasi strongly agreed that free or low cost access to ICT services and e-resources should be promoted.

David (2014) in identifying how pasha centre promotes its services to the community, respondents strongly agreed and agreed that ICT training, job placement and ICT skills training are promoted based on standards requested by the ICT sector.

4.6.2 Promotion of Services

Promotion refers to any activity used to inform target audiences of a product or service. The aim of promotion could be to increase awareness, create interest or create brand loyalty. Based on this, respondents were asked to indicate how often the ICT centre in their community promotes their services. Table 4.9 presents their responses.

Table 4.9: Promotion of Services by the AIC and ACIC

Community		Frequency	Percentage
Adukrom	Very often	18	7.9
	Sometimes	39	17.1
	Rarely	38	16.7
	Never	3	1.3
	No response	130	57.0
	Total	**228**	**100.0**
Asawasi	Always	24	3.6
	Very often	219	32.7
	Sometimes	156	23.3
	Rarely	64	9.6
	No response	207	30.9
	Total	**670**	**100.0**

Source: Field Data, 2019

As shown in the table above, 18 (7.9%) of the respondents from Adukrom indicated that the ICT centre promote their services very often, 39 (17.1%) indicated that the ICT centre promote their services sometimes, 38 (16.7%) indicated that the ICT centre rarely promote their services, 3 (1.3%) indicated that the ICT centre never promote their services and 130 (57.0%) gave no response. It is clear from the table that majority of respondents gave no response to the question because they had indicated earlier that even though they aware of the centre they do not use it. Twenty four (3.6%) of the respondents from Asawasi indicated that the ICT centre promote their services very often, 219 (32.7%) indicated that the ICT centre promote their services sometimes, 156 (23.3%) indicated that the ICT centre rarely promote their services, 64 (9.6%) indicated that the ICT centre never promote their services and 207 (30.9%) gave no response. It is obvious from the table that majority of the respondents indicated that the ICT centre promote their services very often. The findings revealed that majority of respondents from Adukrom gave no response to the question whiles majority of the respondents from Asawasi indicated that that the ICT centre promote their services very often.

4.6.3 Quality of Service Provided by the ICT Centre

Quality is defined as being suitable for its intended purpose while satisfying customer expectations. Therefore quality of service provided by the ICT centre is dependent on the satisfaction of users of the centre. Respondents were asked to rate the quality of service provided by the ICT centre in their community. Table 4.10 presents their responses.

Table 4.10: Quality of Service Provided by the AIC and ACIC

Community	Rating	Frequency	Percentage
Adukrom	Very Good	20	8.8
	Good	56	24.6
	Acceptable	10	4.4
	Poor	12	5.3
	No response	130	57.0
	Total	**228**	**100.0**
Asawasi	Very Good	7	1.0
	Good	200	29.9
	Acceptable	229	34.2
	Poor	27	4.0
	No response	207	30.9
	Total	**670**	**100.0**

Source: Field Data, 2019

From Table 4.10, 20 (8.8%) respondents from Adukrom indicated that the quality of service provided by the ICT centre was very good, 56 (24.6%) indicated that the quality of service provided by the ICT centre was good, 10 (4.4%) indicated that the quality of service provided by the ICT centre was acceptable, 12 (5.3%) indicated that the quality of service provided by the ICT centre was poor and 130 (57.0%) gave no response. It is clear from the table that majority of respondents gave no response to the question because they had indicated earlier that even though they aware of the centre they do not use it.

Seven (1.0%) respondents from Asawasi indicated that the quality of service provided by the ICT centre was very good, 200 (29.9%) indicated that the quality of service provided by the ICT centre was good, 229 (34.2%) indicated that the quality of service provided by the ICT centre was acceptable, 27 (4.0%) indicated that the quality of service provided by the ICT centre was poor and 207 (30.9%) gave no response. It is obvious from the table that majority of the respondents indicated that the quality of

service provided by the ICT centre was acceptable. The findings revealed that majority of respondents from Adukrom gave no response to the question whiles majority of the respondents from Asawasi indicated that the quality of service provided by the ICT centre was acceptable.

4.7 Perceived Benefits of Digital Inclusion

Benefit is an advantage gained from something. Digital inclusion allows people to develop in different aspects to improve quality of life, enable job creation and promote social freedom. Respondents were therefore asked to indicate their view on the benefits of digital inclusion. The table below depicts their responses.

4.11: Responses on Perceived Benefits of Digital Inclusion

Benefits	Agreement	Adukrom		Asawasi	
		Frequency	Percentage	Frequency	Percentage
Improves communication	Strongly Agree	44	19.3	87	13.0
	Agree	102	44.7	307	45.8
	Neutral	82	36.0	271	40.4
	Disagree			5	0.7
	Total	**228**	**100.0**	**670**	**100.0**
Promotes quality education	Strongly Agree	132	57.9	342	51.0
	Agree	86	37.7	317	47.3
	Neutral	10	4.4	11	1.6
	Total	**228**	**100.0**	**670**	**100.0**
Promotes self-sufficiency	Strongly Agree	79	34.6	189	28.2
	Agree	39	17.1	139	20.7
	Neutral	57	25.0	179	26.7
	Disagree	53	23.2	163	24.3
	Total	**228**	**100.0**	**670**	**100.0**
Promotes social freedom	Strongly Agree	44	19.3	150	22.4
	Agree	60	26.3	176	26.3
	Neutral	69	30.3	187	27.9
	Disagree	54	23.7	156	23.3
	Strongly Disagree	1	0.4	1	0.1
	Total	**228**	**100.0**	**670**	**100.0**
Creates employment	Strongly Agree	168	73.7	417	62.2
	Agree	59	25.9	227	33.9

	Neutral	1	0.4	21	3.1
	Disagree			5	0.7
	Total	**228**	**100.0**	**670**	**100.0**
Reduces isolation	Strongly Agree	73	32.0	213	31.8
	Agree	108	47.4	313	46.7
	Neutral	42	18.4	118	17.6
	Disagree	5	2.2	26	3.9
	Total	**228**	**100.0**	**670**	**100.0**
Increases societal participation	Strongly Agree	38	16.7	118	17.6
	Agree	97	42.5	269	40.1
	Neutral	78	34.2	235	35.1
	Disagree	15	6.6	48	7.2
	Total	**228**	**100.0**	**670**	**100.0**
Creates an information and knowledge based society	Strongly Agree	99	43.4	261	39.0
	Agree	83	36.4	293	43.3
	Neutral	46	20.2	116	17.3
	Disagree			3	0.4
	Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From the table above, 44 (19.3%) of respondents from Adukrom strongly agreed that DI improves communication, 102 (44.7%) agreed that DI improves communication and 82 (36.0%) were neutral that DI improves communication. It is clear from the table that majority of the respondents agreed that DI improves communication.

One hundred and thirty two (57.9%) of respondents from Adukrom strongly agreed that DI promotes quality education, 86 (37.7%) agreed that DI promotes quality education and 10 (4.4%) were neutral that DI promotes quality education. It is obvious from the table that majority of the respondents strongly agreed that DI promotes quality education.

Seventy nine (34.6%) of respondents from Adukrom strongly agreed that DI promotes self-sufficiency, 39 (17.1%) agreed that DI promotes self-sufficiency, 57 (25.0%) were neutral that DI promotes self-sufficiency and 53 (23.2%) disagreed that promotes self-

sufficiency. It is clear from the table that majority of the respondents strongly agreed that DI promotes self-sufficiency.

Forty four (19.3%) of respondents from Adukrom strongly agreed that DI promotes social freedom, 60 (26.3%) agreed that DI promotes social freedom, 69 (30.3%) were neutral that DI promotes social freedom, 54 (23.7%) disagreed that promotes social freedom and 1 (0.4%) strongly disagreed that promotes social freedom. It is obvious from the table that majority of the respondents strongly agreed that DI promotes social freedom.

One hundred and sixty eight (73.3%) of respondents from Adukrom strongly agreed that DI creates employment, 59 (25.9%) agreed that DI creates employment and 1 (0.4%) were neutral that DI creates employment. It is clear from the table that majority of the respondents strongly agreed that DI creates employment.

Seventy three (32.0%) of respondents from Adukrom strongly agreed that DI reduces isolation, 108 (47.4%) agreed that DI reduces isolation, 42 (18.4%) were neutral that DI reduces isolation and 5 (2.2%) disagreed that reduces isolation. It is clear from the table that majority of the respondents agreed that DI reduces isolation.

Thirty eight (16.7%) of respondents from Adukrom strongly agreed that DI increases societal participation, 97 (42.5%) agreed that DI increases societal participation, 78 (34.2%) were neutral that DI increases societal participation and 15 (6.6%) disagreed that increases societal participation. It is obvious from the table that majority of the respondents agreed that DI increases societal participation.

One hundred and sixty eight (73.3%) of respondents from Adukrom strongly agreed that DI creates an information and knowledge based society, 59 (25.9%) agreed that DI creates an information and knowledge based society and 1 (0.4%) were neutral that DI creates an information and knowledge based society. It is clear from the table that majority of the respondents strongly agreed that DI creates information and knowledge based society.

From the table above, 87 (13.0%) of respondents from Asawasi strongly agreed that DI improves communication, 307 (45.8%) agreed that DI improves communication, 271 (40.4%) were neutral that DI improves communication and 5 (0.7%) disagreed that DI improves communication. It is clear from the table that majority of the respondents agreed that DI improves communication.

Three hundred and forty two (51.0%) of respondents from Asawasi strongly agreed that DI promotes quality education, 317 (47.3%) agreed that DI promotes quality education and 11 (1.6%) were neutral that DI promotes quality education. It is obvious from the table that majority of the respondents strongly agreed that DI promotes quality education.

One hundred and eighty nine (28.2%) of respondents from Asawasi strongly agreed that DI promotes self-sufficiency, 139 (20.7%) agreed that DI promotes self-sufficiency, 179 (26.7%) were neutral that DI promotes self-sufficiency and 163 (24.3%) disagreed that promotes self-sufficiency. It is clear from the table that majority of the respondents strongly agreed that DI promotes self-sufficiency.

One hundred and fifty (22.4%) of respondents from Asawasi strongly agreed that DI promotes social freedom, 176 (26.3%) agreed that DI promotes social freedom, 187 (27.9 %) were neutral that DI promotes social freedom, 156 (23.3%) disagreed that promotes social freedom and 1 (0.1%) strongly disagreed that promotes social freedom. It is obvious from the table that majority of the respondents were neutral that DI promotes social freedom.

Four hundred and seventeen (62.2%) of respondents from Asawasi strongly agreed that DI creates employment, 227 (33.9%) agreed that DI creates employment, 21 (3.1%) were neutral that DI creates employment and 5 (0.7%) disagreed that DI creates employment. It is clear from the table that majority of the respondents strongly agreed that DI creates employment.

Two hundred and thirteen (31.8%) of respondents from Asawasi strongly agreed that DI reduces isolation, 313 (46.7%) agreed that DI reduces isolation, 118 (17.6%) were neutral that DI reduces isolation and 26 (3.9%) disagreed that reduces isolation. It is clear from the table that majority of the respondents agreed that DI reduces isolation.

One hundred and eighteen (17.6%) of respondents from Asawasi strongly agreed that DI increases societal participation, 269 (40.1%) agreed that DI increases societal participation, 235 (35.1%) were neutral that DI increases societal participation and 48 (7.2%) disagreed that increases societal participation. It is obvious from the table that majority of the respondents agreed that DI increases societal participation.

Two hundred and sixty one (39.0%) of respondents from Asawasi strongly agreed that DI creates an information and knowledge based society, 293 (43.3%) agreed that DI creates an information and knowledge based society, 116 (17.3%) were neutral that DI creates an information and knowledge based society and 3 (0.4%) disagreed that DI creates an information and knowledge based society. It is clear from the table that majority of the respondents agreed that DI creates information and knowledge based society.

The findings revealed that majority of the respondents from Adukrom and Asawasi agreed that DI promotes communication. Also, majority of the respondents from Adukrom and Asawasi strongly agreed that DI promotes quality education. Again, majority of the respondents from Adukrom and Asawasi strongly agreed that DI promotes self-sufficiency. Furthermore, majority of the respondents from Adukrom and Asawasi were neutral that DI promotes social freedom. More so, most of the respondents from Adukrom and Asawasi strongly agreed that DI creates employment. Majority of the respondents from Adukrom and Asawasi agreed that DI reduces isolation. Additionally, majority of the respondents from Adukrom and Asawasi agreed that DI increase societal participation. Finally, majority of the respondents in Adukrom strongly agreed that DI creates information and knowledge based society whiles majority of respondents in Asawasi agreed that DI creates information and knowledge based society.

4.8 Challenges in the use of ICT Centres

A challenge is something difficult which requires great determination. Challenges in the use of ICT centres are the difficulties individuals face in the use of ICT centres.

Upon this background, respondents were asked to indicate the challenges they faced while using the ICT centre. Table 4.9 presents their challenges.

Table 4.12: Responses of Challenges in the use of ICT Centres

Challenges	Agreement	Adukrom		Asawasi	
		Frequency	Percentage	Frequency	Percentage
Poor Computer Skills	Strongly Agree	63	27.6	227	33.9
	Agree	81	35.5	285	42.5
	Neutral	69	30.3	138	20.6
	Disagree	15	6.6	20	3.0
	Total	**228**	**100.0**	**670**	**100.0**
Poor Network Connectivity	Strongly Agree	77	38.8	215	32.1
	Agree	85	37.3	287	42.8
	Neutral	46	20.2	133	19.9
	Disagree	18	7.9	31	4.6
	Strongly Disagree	2	0.9	4	0.6
	Total	**228**	**100.0**	**670**	**100.0**
Insufficient Working Hours	Strongly Agree	51	22.4	201	30.0
	Agree	97	42.5	318	47.5
	Neutral	76	33.3	147	21.9
	Disagree	4	1.8	4	0.6
	Total	**228**	**100.0**	**670**	**100.0**
Lack of ICT Policy	Strongly Agree	47	20.6	205	30.6
	Agree	132	57.9	314	50.9
	Neutral	49	21.5	121	18.1
	Disagree			3	0.4
	Total	**228**	**100.0**	**670**	**100.0**
Virus Threat	Strongly Agree	53	23.2	168	25.1
	Agree	74	32.5	333	49.7
	Neutral	67	29.4	168	25.1
	Disagree	34	14.9	1	0.1
	Total	**228**	**100.0**	**670**	**100.0**
Power Outages	Strongly Agree	37	16.2	193	28.8
	Agree	104	45.6	315	47.0
	Neutral	70	30.7	162	24.2
	Disagree	17	7.5		
	Total	**228**	**100.0**	**670**	**100.0**
Inadequate Computers	Strongly Agree	24	10.5	170	25.4
	Agree	98	43.0	329	49.1
	Neutral	85	37.3	167	24.9
	Disagree	21	9.2	4	0.6
	Total	**228**	**100.0**	**670**	**100.0**

Source: Field Data, 2019

From Table 4.9, 63 (27.6%) of respondents from Adukrom strongly agreed that poor computer skills is a challenge, 81 (35.5%) agreed that poor computer skills is a challenge, 69 (30.3%) were neutral that poor computer skills is a challenge and 15 (6.6%) disagreed that poor computer skills is a challenge. It is clear from the table that majority of the respondents agreed that poor computer skills is a challenge.

Seventy seven (38.8%) of respondents from Adukrom strongly agreed that poor network connectivity is a challenge, 85 (37.3%) agreed that poor network connectivity is a challenge, 46 (20.2%) were neutral that poor network connectivity is a challenge, 18 (7.9%) disagreed poor network connectivity is a challenge and 2 (0.9%) strongly disagreed that poor network connectivity is a challenge. It is obvious from the table that majority of the respondents agreed that poor network connectivity is a challenge.

Fifty one (22.4%) of respondents from Adukrom strongly agreed that insufficient working hours is a challenge, 97 (42.5%) agreed that insufficient working hours is a challenge, 76 (33.3%) were neutral that insufficient working hours is a challenge and 4 (1.8%) disagreed that insufficient working hours is a challenge. It is clear from the table that majority of the respondents agreed that insufficient working hours.

Forty seven (20.6%) of respondents from Adukrom strongly agreed that lack of ICT policy is a challenge, 132 (57.9%) agreed that lack of ICT policy is a challenge and 49 (21.5%) were neutral that lack of ICT policy is a challenge. It is obvious from the table that majority of the respondents agreed that lack of ICT policy is a challenge.

Fifty three (23.2%) of respondents from Adukrom strongly agreed that virus threat is a challenge, 74 (32.5%) agreed that virus threat is a challenge, 67 (29.4%) were neutral that virus threat is a challenge and 34 (14.9%) disagreed that virus threat is a challenge. It is clear from the table that majority of the respondents agreed that virus threat is a challenge.

Thirty seven (16.2%) of respondents from Adukrom strongly agreed that power outage is a challenge, 104 (45.6%) agreed that power outage is a challenge, 70 (30.7%) were neutral that power outage is a challenge and 17 (7.5%) disagreed that power outage is a challenge. It is obvious from the table that majority of the respondents agreed that power outage is a challenge.

Twenty four (10.5%) of respondents from Adukrom strongly agreed that inadequate computers is a challenge, 98 (43.0%) agreed that inadequate computers is a challenge, 85 (37.3%) were neutral that inadequate computers is a challenge and 21 (9.2%) disagreed that inadequate computers is a challenge. It is clear from the table that majority of the respondents agreed that inadequate computers is a challenge.

From Table 4.9, 227 (33.9%) of respondents from Asawasi strongly agreed that poor computer skills is a challenge, 285 (42.5%) agreed that poor computer skills is a challenge, 138 (20.6%) were neutral that poor computer skills is a challenge and 20 (3.0%) disagreed that poor computer skills is a challenge. It is clear from the table that majority of the respondents agreed that poor computer skills is a challenge.

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Two hundred and fifteen (32.1%) of respondents from Asawasi strongly agreed that poor network connectivity is a challenge, 287 (42.8%) agreed that poor network connectivity is a challenge, 133 (19.9%) were neutral that poor network connectivity is a challenge, 31 (4.6%) disagreed poor network connectivity is a challenge and 4 (0.6%) strongly disagreed that poor network connectivity is a challenge. It is obvious from the table that majority of the respondents agreed that poor network connectivity is a challenge.

Two hundred and one (30.0%) of respondents from Asawasi strongly agreed that insufficient working hours is a challenge, 318 (47.5%) agreed that insufficient working hours is a challenge, 147 (21.9%) were neutral that insufficient working hours is a challenge and 4 (0.6%) disagreed that insufficient working hours is a challenge. It is clear from the table that majority of the respondents agreed that insufficient working hours.

Two hundred and five (30.6%) of respondents from Asawasi strongly agreed that lack of ICT policy is a challenge, 314 (50.9 %) agreed that lack of ICT policy is a challenge, 121 (18.1%) were neutral that lack of ICT policy is a challenge and 3 (0.4%) disagreed that lack of ICT policy is a challenge. It is obvious from the table that majority of the respondents agreed that lack of ICT policy is a challenge. One hundred and sixty eight (25.1%) of respondents from Asawasi strongly agreed that virus threat is a challenge, 333 (49.7%) agreed that virus threat is a challenge, 168 (25.1%) were neutral that virus threat is a challenge and 1 (0.1%) disagreed that virus threat is a challenge. It is clear from the table that majority of the respondents agreed that virus threat is a challenge.

One hundred and ninety three (28.8%) of respondents from Asawasi strongly agreed that power outage is a challenge, 315 (47.0%) agreed that power outage is a challenge and 162 (24.2%) were neutral that power outage is a challenge. It is obvious from the table that majority of the respondents agreed that power outage is a challenge.

One hundred and seventy (25.4%) of respondents from Asawasi strongly agreed that inadequate computers is a challenge, 329 (49.1%) agreed that inadequate computers is a challenge, 167 (24.9%) were neutral that inadequate computers is a challenge and 4 (0.6%) disagreed that inadequate computers is a challenge. It is clear from the table that majority of the respondents agreed that inadequate computers is a challenge.

The findings revealed that majority of the respondents from Adukrom and Asawasi agreed that poor computer skills is a challenge. Also, majority of the respondents from Adukrom and Asawasi agreed that poor network connectivity is a challenge. Again, majority of the respondents from Adukrom and Asawasi agreed that insufficient working hours is a challenge. Furthermore, majority of the respondents from Adukrom and Asawasi agreed that lack of ICT policy is a challenge. More so, most of the respondents from Adukrom and Asawasi agreed that virus threat is a challenge. Additionally, majority of the respondents from Adukrom and Asawasi agreed that power outage is a challenge. Finally, majority of the respondents in Adukrom and Asawasi agreed that inadequate computers are a challenge.

4.9 Interviews

This section deals with data analysis of the interview conducted between the researcher and the Managers of the Adukrom and Asawasi ICT centre. The Managers were interviewed for their opinion on promoting digital inclusion for residents in Ashanti Region by accessing the Adukrom and Asawasi ICT centre. Their responses to the questions are explained below.

4.9.1 Channels of Awareness of ICT Centre

The researcher asked how the community got informed about the ICT centre. In Adukrom, the manager mentioned that *"we created awareness by advertising the centre to the community at large and the schools around".* This is conformity with Asawasi when the manager stated that some members of the ICT centre go out to meet individuals in the community, organisations and schools to talk to them about the ACIC and the kind of services they offer. He further mentioned that they have computer training for individuals in the community, type setting and any other IT related services at a little fee to maintain the centre since the Municipal Assembly hardly provides financial support.

4.9.2 Frequency of Use of the Centre

In finding out the frequency of the usage of the ICT centre, the researcher asked how often individuals in the community used the centre. The manager of the AIC said *"they do not…this is because the centre does not have the needed items to serve the community".* If they had these items the centre would even be self-advertising to the community. This in contradictory with Asawasi when the manager mentioned that *"within the first two years after the centre was established…individuals in the*

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community visited often to do research, especially tertiary students and this is because the facility had internet access". After the first two years the contract with the internet service provider was terminated, which reduced patronage of the centre. However due to the ICT training provided by the centre some individuals in the community still used the centre.

4.9.3 Use of the ICT Centre

In order to gather information on the reasons why individuals in Adukrom and Asawasi used the ICT centre, the manager of the AIC revealed that, individuals in the community hardly used the centre so he could not make a particular statement about that. On the contrary the manager of the ACIC said that, *"we are in the digital world… even illiterates have heard about IT… and by the use of mobile phones people want to have more knowledge in the use of IT.* As a result, people come to learn to have more digital skills. Most people applied what they learnt on their businesses in the community.

4.9.4 Computer Literacy Skills and Use of ICT Centres

In trying to find out if computer literacy skill is important in the use of ICT centres, the researcher asked the managers whether computer literacy skill is a prerequisite in using ICT centres. In Adukrom the manager said, *"computer literacy skills is important and at the same time not important".* This is because some people may come to use the ICT centre for workshop that has nothing to do with ICT. Similarly, in Asawasi the manager said

… *"Well, when we talk of computer in our local areas, they see computer to be just the keyboard, system unit, but we are talking about IT in general so even though people*

may not use the direct computer, they may use mobile phones which means that they are also using ICT". Therefore using ICT centres does not require computer skills.

4.9.5 Promotion of Services

In gathering information on how the centre promotes their services to the community, the manager of the AIC mentioned that, they do not go out to promote their services to the community but the schools within the catchment area of the centre come to have their IT lessons. *"Usually, individuals in the community who passed by the centre enter to ask what's going on and they are told".* In Asawasi the manager said that, *"Almost every day we go out and educate people on IT...* A*lso, recently we introduced a program called 'Coding Club' for mainly students within the catchment area of the centre... However, any individual in the community interested in coding can come and join the club...* Again, now in the world of technology, people are making it in programming so we want to get the youth to get used to programming by starting with coding's before the study pure programming. IT is obvious that the ACIC put in more efforts in promoting their services than the AIC.

4.9.6 Frequency of Training

In examining how often the centre organized training services for the community. The manager of the AIC mentioned that they organised training for students who used the centre and not the community at large and this is conformity with the manager of the ACIC when the manager said, they organised training sessions for mainly students and once in a while for the community because they had lost most of their users.

4.9.7 Policy on the Use of ICT

In finding out if the centre had a policy on the use of ICT; the researcher asked whether the centre had a policy on the use of ICT. In Adukrom the manager said, *"Yes, we have a policy on the use of ICT but because the centre is not busy we don't use it, so to me it doesn't exist".* If the place is busy the policy would be well spelt and used. On the contrary, in Asawasi the manager said, *"Yes, we do"… "We paste them on the wall so that it becomes visible to users".* Also, the IT gadgets need protection for it to work for a longer time, so we have people who monitor the students when they come around so that they don't destroy the computers. In short the policies of the centre are enforced.

4.9.8 Source of Funding

The researcher asked the managers of the ICT centres about their source of funding. In Adukrom, the manager said once in a while they got some contribution from District Assembly and the PTA of one of the schools they serve even though it's not enough to totally manage the centre. In contradictory with Asawasi, the manager mentioned that, funding was their biggest challenge. He also said since the centre was established about four (4) years ago there had not been a single funding from the municipal Assembly or stakeholders to support the centre. They managed the centre based on the services provided to the community. However, they had sent several proposals to the municipal assembly but had not gotten any feedback yet. However, they spoke to the MCE recently and he agreed to work on the proposal. The researcher also asked how staff members are paid. Both managers said the staffs who assist are NABCO (Nation Builders Corps) personnel's.

4.9.9 Benefits of the ICT Centre to the Community

The use of ICT centres plays an important role in promoting DI in communities. The researcher therefore asked if the ICT centre has been beneficial to individuals in the community. In Adukrom, the manager mentioned that the centre has been beneficial to students who used the centre for their computer lessons compared to individuals in the community because they did not use the centre. On the contrary, in Asawasi the manager mentioned that, the centre has been very beneficial to students, youth and the community at large. Furthermore, as a result of the free training services organised by the centre, some individuals in the community had jobs and some had gotten promotion in their jobs. Others also had opportunity to work with NABCO.

4.9.10 Challenges in the Use of the AIC and ACIC

Despite the benefits in the use of ICT, there are challenges. Based on this the researcher asked about the challenges people faced the use of the ICT centre. In Adukrom, the manager indicated that they did not have the needed devices, hence beginners find it difficult to learn, especially students who come without any computer knowledge. Also training becomes difficult when an individual comes to the centre and does not have basic knowledge and skills in IT. The researcher asked the manager whether language was a challenge to some users of the centre. He said that language was not a challenge to them because most of their users were students who could read and write in English. Furthermore he mentioned that they had several challenges because they needed things such as; internet connectivity, projectors, louver blades to prevent rain, burglar proof, water pipeline connection, ceiling fans, fencing among others which could facilitate their work.

In Asawasi, the manager indicated that there were several challenges people faced in using the ICT centre. Some of the challenges were; inadequate computers, inadequate seats and space, so some had to sit in pairs which was very uncomfortable, people also felt uncomfortable because of the environment. As a result of these challenges there had been a reduction in the use of the ICT centre by individuals in the community. Some schools in the community also complained that, they thought the centre does not function anymore, because when they looked around they don't see a place meant for IT. The researcher asked the Manager whether language was a challenge to some users of the centre. He said, "We use computer in English language in Ghana and most of the youth in this community are not well educated, but they manage to use mobile phone". The centre had people who speak different languages such as Twi, Hausa and Dagbani among others, so they did their best to provide information in the language the users understand through translation. Even though both managers agreed that there were challenges in the use of ICT centres, these challenges were peculiar with each of the ICT centre.

CHAPTER FIVE

DISCUSSION ON MAJOR FINDINGS

5.1 Introduction

This chapter presents detailed discussion on major findings of the study based on the research objectives and existing literature. The findings would be discussed under the following headings.

1. Awareness of ICT centres

2. Extent of use of ICT centres

3. Computer literacy skills and use of ICT centres

4. The role of ICT centres in promoting digital inclusion

5. Perceived benefits of digital inclusion

6. Challenges in the Use of ICT Centres

5.2 Awareness of ICT Centres

Awareness is a state of having knowledge about a particular subject or thing. Therefore, awareness of ICT centres is basically having knowledge about the existence of an ICT centre. Awareness of ICT centres could be created through community broadcast, oral communication and other announcement media. The first objective was to determine the level of awareness of the Adukrom and Asawasi ICT centre by individuals in the Adukrom and Asawasi community. The findings showed that both respondents from Adukrom and Asawasi answered in affirmative. This is an indication that they were all aware of the existence of the ICT centre in their communities. With the proliferation of ICT centres, the world has become more alert on the important role ICT plays in development.

Respondents in both communities mentioned that they became aware of the ICT centre through radio, television, friends and other means such as community training, internship and strolling. This is an indication that an effective means of doing publicity is through oral communication (through friends). Also, respondents in Adukrom indicated that the services provided by the AIC were typing, training, job coaching for students except photocopying, printing, scanning, internet service and wireless service whiles respondents in Asawasi indicated that the services provided by the ACIC were photocopying, printing, typing, scanning, training, job coaching for students except internet service and wireless service. It is obvious that the ACIC provided more services than the AIC. However, the interview with the managers of the centres revealed that they created awareness by advertising the centre to the community at large and the schools within the catchment area of the centre.

According to Orsnes (2013) the effective use of ICT largely depends on how accessible, available and how reachable and portable they are to the users. Understanding peoples need for information and an immense awareness is a prerequisite to convey the enormous benefits from the objectives of the governments' policies. (Kassongo, Tucker & Pather, 2018). Similarly, Nampijja (2010) revealed that users who are aware of the ICT centres confirmed how the centre has brought a significant transformation in their political, economic and social lives.

Acquah (2012) investigated the part ICT plays in improving and developing small and medium scale enterprises in Ghana revealed that ICT awareness seems to be high among SMEs owners Ghana. Nampijja (2010) also examined the role ICT plays in the development of rural communities. The findings revealed that users who are aware of

the ICT centres confirmed how the centre has brought a significant transformation in their political, economic and social lives. However, there is a need to strengthen the centre to enlighten individuals to develop skills to make maximum use of the resources.

On the contrary, Oyediran (2015) conducted a study on awareness and adoption by architectural, engineering and construction industry educators in Nigeria. The findings showed that there is restricted degree of awareness to the different ICT instruments and the majority of the instructors were great in taking care of word preparing contrasted with different devices. In this way it is significant for the administration of the organization to give enough assets to execute IT strategies.

5.3 Extent of Use of ICT Centres

The second objective was to investigate the extent of use of the ICT centre by people of Adukrom and Asawasi. The findings revealed that most respondents in Adukrom rarely used the AIC whiles most respondents in Asawasi used the ACIC very often. However, majority of respondents in both communities indicated that they had never used the centre even though they were aware of it. This confirms the interview with the managers that even though individuals in both communities were aware of the ICT centre, they do not use the centre. Also, from the findings, majority of respondents in Adukrom mentioned that did not use the centre even though they were aware of it whiles majority of respondents in Asawasi mentioned that they had used the centre for 1 year.

From the findings, respondents in Adukrom and Asawasi indicated that they used the ICT centre in their community because it was close to them, they didn't pay money and

it was the only ICT centre in their community. However, majority of them used the centre because they did not pay money. This contradicts the interview with the managers on reasons why people used the centre.

Respondents in Adukrom and Asawasi stated that they used the centre for browsing, entertainment, research, training, photocopying, printing and teaching nevertheless most respondents from Adukrom used the centre for training whiles most respondents in Asawasi used the centre for research. The findings contradict the findings of Harvey (2016) in a study on the use of ICT and social media in youth work. The study found that majority of workers used ICT on daily bases.

According to Fleischer (2015) leaders of the world have realized over the years that the effective use of ICT determines the level of development in any county to a very large extent. Therefore investments in ICT inventions are significant in advancing and developing an economy, they are necessary to bridge digital divide to enable equal access to information and to foster innovation (Bilbao-Osorio, Dutta & Lanvin, 2014). Most individuals in Ghana do not make maximum use of ICT centres set up in the various communities but used computers at home (Research ICT Africa, 2014).

This confirms the findings of Siddiquah and Salim (2017) which revealed that most of the students have computers with internet connectivity at universities and home. Most respondents used computers for academic and recreational purpose.

Additionally, respondents in Adukrom indicated that desktop computer was the only ICT device in the AIC whiles respondents in Asawasi indicated the ICT devices in the

ACIC as scanner, printer, photocopier and projector. It is obvious that there are more ICT devices in the ACIC than the AIC. The extent of use of ICT centres is the particular degree to which an ICT centre is used.

5.4 Computer Literacy Skills and Use of ICT Centres

Computer literateness is having the understanding and capability to use computers and associated equipment proficiently. Computer literacy skills on a very basic level is the ability to use a computer such as knowing how to boot a computer, logging in, use the keyboard and mouse, access software and the internet.

Another objective was to identify the level of computer literacy among people of Adukrom and Asawasi. The findings revealed that majority of respondents from Adukrom have a basic level of computer literacy whiles respondents from Asawasi have intermediary level of computer literacy.

Also, in finding out individual involvement with ICT, respondents were asked to rate their level of knowledge in some selected computer skills. The findings revealed that respondents in both communities had an average level of knowledge in typing, MS word, MS excel, MS power point and others also added that they had skills in hardware and networking (Cisco), programming in Java, C++, HTML, CSS and word press. Majority of respondents in Adukrom and Asawasi specified that they had digital devices such as mobile phones, pen drive and laptop. Others also added that they had routers and USB modems. It can therefore be inferred that individuals in Adukrom and Asawasi preferred to use mobile devices to access information than computers in ICT centres.

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Furthermore, majority of respondents in Adukrom and Asawasi indicated that computer literacy skill was important in the use of ICT centres and gave reasons such as; it gives basic understanding to the use of software and IT applications, it enables one to know how to boot the computer or laptop, one is able to use MS office, it helps the user to navigate and perform tasks on the computers easily because it provide the knowledge on computer usage, without computer skill one cannot do any work, it helps in using the computer without any difficulty, it helps in having more knowledge especially for the beginners, without computer literacy a person will be redundant and of no use in the ICT centre and it helps one to use the ICT centre with ease by facilitating research on a particular topic. However, respondents who indicated that computer literacy skill was not important in the use of ICT centres gave no reasons for their response. This implies that one can effectively use an ICT centre by being a computer literate. This contradicts the interview with the managers of the AIC and ACIC that computer literacy skill was not important in using ICT centres.

This is in conformity with the findings of Deen-Swarray (2016) toward DI on understanding the literateness on acceptance and usage of mobile phone and internet in Africa. The findings revealed that adoption and use increased even more when e-skills literacy is present.

ERAN (2017) organised a conference dubbed "capitalising on digital literacy skills for capacity development of people who are not in education, employment or training in South Africa". The conference was meant to establish if digital knowledge skills could serve as an accelerator to help in developing the capacity of people who are unemployed. The study also revealed that a digital knowledge skill is very important in

developing people. Instituting of IT centres in societies will provide ICT skills based training to endow people.

On the contrary ERAN (2017), Garrido, Sullivan and Gordon (2010) conducted a study to propose a framework to know the role of IT skills in improving job prospects for people with little earnings. The research was undertaken with over seventy (70) non-governmental organizations that provide training in ICTs and other job opportunities in thirty (30) countries worldwide. The researchers stated that having basic ICT skills is necessary but is usually not enough to improve employment situation of disadvantaged groups. This implies that even though one may have the skills to access ICT centres, there is the need to provide the needed infrastructure. The effective use of ICTs is linked to issues such as the quality of access to ICTs, thus public access point and speed of internet (Herbert, 2017).

Digital skills are foundation for the poor to empower themselves. People with exceptional potentials can take advantage of openings to acquire skills to adapt to the rapid transformation in the current digital age. However, providing ICT infrastructure in communities with poor digital skills will not fully solve the problem. For instance in Brazil, despite the ICT infrastructures in place, individuals do not see the need for digital access (Chetty et al., 2017).

Again, in support Bacon and MacKinnon (2017) conducted a study on lasting digital skills improvement, present picture and upcoming challenges. The findings showed that there will be a momentous transformation in the labour force over the next ten to twenty

years. As such there is a need to develop strategies to upgrade the skills of those who are made redundant through automation.

5.5 ICT Centres and Digital Inclusion

DI is the ability for individuals to have access and use ICTs. ICT centres could promote digital inclusion by providing community training, access to computers and technical support. To be digitally included, one must seek strategies that build openings so that the less privileged can take part in decision making process. (Nemer, 2015).

The fourth objective was to determine the role of ICT centres in promoting digital inclusion. It was revealed that the AIC and ACIC could promote digital inclusion by organizing   free community based computer training, free access to PCs and internet, providing technical support, free or low cost digital literacy courses, shared Wi-Fi or internet access from LAN and free or low cost access to ICT services and e-resources. However, majority of respondents in Adukrom and Asawasi strongly agreed that free community based computer training, free or low cost digital literacy courses and shared Wi-Fi or internet access from LAN should be promoted. An interview with the managers of the AIC and ACIC revealed that they organised training sessions for mainly students and once in a while for the community. It was discovered that the AIC sometimes promote their services whiles the ACIC promote their services very often. The findings also showed that the services provided by the ACIC were acceptable whiles that of Adukrom were good.

Similarly, David (2014) investigated the challenges of promoting DI in rural PDC. The study identified how pasha centre promotes its services to the community. Respondents

were asked how they agreed to the promotions by pasha centres. The respondents strongly agreed those ICT training and job placements are promoted. Respondents were also asked about awareness promoting ICT careers, the respondents agreed to a slightly high extent and agreed to limited level on promotion of ICT skills training based on standards requested by the ICT sector. However, advertising and public relations helps create a public profile for digital centres. To be digitally included, one must seek strategies that build openings so that the less privileged can take part in decision making process (Nemer, 2015).

Ibrahim (2018) explored implementation challenges of CIC plan in the GA East Metropolis in the Greater Accra region. Data was put together using a focused group dialogue using ten participants. The findings revealed that in order to sustain CIC projects, implementers of the programme need to integrate local views into the technology design. If the ICT programme meets the direct needs of users there would be high usage.

Digital technologies need to be disseminated various formats considering the target group. ICT centres can promote digital inclusion by improving their environment. However, Dias (2011) argues that even though governments of various countries put in large investments to promote DI, the results of such programs are still evaluated poorly.

5.6 Perceived Benefits of Digital Inclusion

The study also sought to find out the benefits of DI to the people of Adukrom and Asawasi. The findings revealed that respondents gained several benefits by being digitally included. Majority of respondents in Adukrom and Asawasi indicated that digital inclusion improves communication, promotes quality education, promotes self-sufficiency, creates employment, reduces isolation, increases societal participation and creates information and knowledge based society. The managers of the AIC and ACIC mentioned that the centre had been beneficial to students, youth and the community at large.

The finding confirms the findings of Alam and Imran (2015) who surveyed the elements which influenced refugee migrants adopting technology and how important it is to their societal inclusion. The study revealed that refugee migrants beheld technology as an important device for knowledge, conforming to the broader community, employment opportunities, accessing education and staying in contact with loved ones.

Also, a study by Pokpas (2014) indicated that in targeting minor compensations significant to a person's life, greater outcomes will accompany. Negative social vices such as alcoholism, drugs and teenage pregnancy can be prevented or changed if we have access to appropriate information and knowledge.

Furthermore, David (2014) stated that promoting ICT diffusion guarantees a wide range of benefits for firm competitiveness and economic growth. Generally having access to ICT through DI improves communication, strengthens democracy, promotes quality

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education and enhances professional development of teachers, create jobs, improve health and promote self-sufficiency.

Digital inclusion would not just benefit individuals in the community. Thus, the government would also benefit through an increase in productivity and improved health. Businesses and organisations can benefit when employees use internet based applications to work efficiently to increase productivity. Also, the society can benefit by involving the less privileged in social activities thereby reducing social exclusion. Largely the economy would benefit through an increased demand for the ICT industry to be innovative and an increase in competition by attracting investment (Government Digital Service, 2016). Digital inclusion allows people to develop in different aspects to improve quality of life, enable job creation and promote social freedom.

5.7 Challenges in the Use of ICT Centres

Challenges in the use of ICT centres are the difficulties individuals face in the use of ICT centres such as poor network connectivity, virus threat, lack of technical support, poor computer skills among others.

The sixth objective was to find out the challenges people face in using the AIC and ACIC. The findings revealed the challenges individuals faced in the use of the centres were; poor computer skills, poor network connectivity, insufficient working hours, lack of ICT policy, virus threat , power outages and inadequate computers. The managers also added that they lacked the necessary equipment and facilities which make users of the centre face certain challenges whiles using the centre.

The findings are in conformity with Harvey (2016) conducted a study on using in youth work. He identified a unique challenge as insufficient understanding of ICT and skills in utilizing digital technology. Report on Finland showed that workers (48%) sensed they lacked competency. Respondents from Austria and Denmark indicated that they don't have adequate information of digital and ICT media. Other challenges were; poor connectivity, insufficient working hours, inadequate of infrastructure and lack of guidelines on how to use ICT.

Similarly, Siddiquah and Salim (2017) in identifying the ICT facilities, skills, usage and the complications encountered by the students of advanced education found that, internet signal problem, slow speed of computers, virus threat, power outages and lack of internet were challenges students face in using ICTs. Also, students are less skilled in using discussion forums, digital libraries, and blogs.

Again, David (2014) studied the challenges of promoting DI in rural setting by PDC to determine challenges facing PDC in rural places, and the effects of PDC in promoting DI in rural place. The study revealed that computer illiteracy is the main constrain facing the centre. Other challenges were infrastructure, poor internet connectivity, limited products, low level of marketing and awareness. The GLA carried out a research to understand the challenges people face in using ICT, the study revealed that cost, sustainable access to training and lack of interest were the barriers to exclusion (Greater London Authority, 2015).

Furthermore, Ibrahim (2018) explored implementation challenges of CIC plan in the GA East Metropolis in the Greater Accra region. The challenges mentioned by the

participants were illiteracy and myth, technical complexity, foreign content, limited mode of delivery, foreign technology and lack of local involvement. Digitally excluded people do not engage with digital technology due to unaffordability and lack of requisite digital skills (Walton, Kop, Spriggs & Fitzgerald, 2013)

There is a greater awareness about the AIC and ACIC. The use of the centre is determined by individuals' computer literacy skills and the need to be digitally included. The findings also revealed that even though individuals faced challenges in the use of the ICT centre, the centre had benefited students, youth and the community at large.

5.8 Theoretical Interpretations of the Findings

The framework for the development of e-skills for digital inclusion by Pokpas (2014) was adopted for this study. The rationale of the model is that particular DI prerequisites, for example, access to ICT, skills and effective utilization lead to momentary results, which involves the essential utilization of ICT for individual advantages. The essential utilization of ICT brings about short term effect which prompts continuous conduct changes prompting improvement in the personal satisfaction and conquering a portion of the difficulties influencing one's life. The construct of this model such as, access to ICT, appropriate skills and effective usage conforms to the objectives of the study as well as the findings. It was revealed that all the participants were aware of the presence of the ICT centres. Individuals from both Adukrom and Asawasi also stated that even though they were aware of the ICT centre, they did not use it. Therefore computer literateness is important as having information and access to use ICT centres.

Again, the AIC and the ACIC which serves as catalyst to promote DI among the people of Adukrom and Asawasi must make effort to offer services that will satisfy the needs of users. The basic use of ICT results in short-term impact which leads to continuous change in behaviour leading to improvement in the life of individuals. It is envisioned that these improvements eventually leads to a broader impact on individuals and society, which finally coincides with the objectives of the national sustainable agenda.

Furthermore, the framework towards DI indicates that the basic use of ICT results in short-term impact which leads to continuous change in behaviour leading to improvement in the life of individuals will help challenges affecting disadvantaged communities. The theoretical framework provided important variables to understand the objectives of this study. Therefore it justifies why the theory was adopted for this study. This is an indication that the findings of this research have been validated by the framework.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This final chapter presents the summary of findings of the study in relation to the research objectives. This chapter also draws conclusions based on the findings and recommend ways of promoting digital inclusion in the Adukrom and Asawasi community.

6.2 Summary of Findings

This study examined the role of Adukrom ICT Centre and the Asawasi Community ICT Centre in promoting digital inclusion among the people of Adukrom and Asawasi community in the Ashanti Region. The summary of the findings are presented below.

6.2.1 Awareness of ICT Centres

The first objective of the study was to determine the level of awareness of the Adukrom and Asawasi ICT centre. The findings showed that individuals from Adukrom and Asawasi were all aware of the existence of the ICT centre in their community. Respondents from Adukrom became aware of the ICT centre through television whiles respondents from Asawasi became aware of the ICT centre through friends. The findings also revealed that typing, training and job coaching for students was available at the AIC whiles photocopying, printing, typing, scanning, training and job coaching for students was available at the ACIC.

6.2.2 Extent of Use of ICT Centres

The study investigated the extent of use of the ICT centre by people of Adukrom and Asawasi. The findings revealed that even though individuals in both communities were aware of the ICT centres they did not use it. Also, from the findings respondents from Adukrom do not use the ICT centre whiles most respondents from Asawasi had used the centre for 1 year. However, majority of respondents from both communities gave no response to the question because they had indicated earlier that even though they were aware of the centre they did not n, they did not use it. The findings revealed that most respondents from Adukrom did not use the ICT centre whiles most respondents from Adukrom did not use the ICT centre whiles most respondents used the ICT centre for entertainment. Furthermore respondents in Adukrom indicated that desktop computer was the only ICT device in the AIC whiles respondents in Asawasi indicated the ICT devices in the ACIC as scanner, printer, photocopier and projector.

6.2.3 Computer Literacy Skills and Use of ICT Centres

The third objective was to identify the level of computer literacy among the people of Adukrom and Asawasi. The findings revealed that respondents from Adukrom have basic level of computer literacy whiles respondents from Asawasi have intermediary level of computer literacy. Also, most of the respondents in Adukrom indicated their level of knowledge as typing; fair, MS word; good, MS excel; excellent and MS power point; good whiles most respondents in Asawasi indicated their level of knowledge as typing; good, MS word; good, MS excel; good and MS power point; fair. Again, majority of respondents in Adukrom and Asawasi indicated that computer literacy skill was important in the use of ICT centres gave reasons such as; it gives basic understanding to the use of software and IT applications, it enables one to know how to

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boot the computer or laptop, one is able to use MS office, it helps the user to navigate and perform tasks on the computers easily because it provide the knowledge on computer usage, without computer skill one cannot do any work, it helps in using the computer without any difficulty, it helps in having more knowledge especially for the beginners, without computer literacy a person will be redundant and of no use in the ICT centre and it helps one to use the centre with ease by facilitating research on a particular topic

6.2.5 ICT Centres and Digital Inclusion

The study also determined how the ICT centres promote DI in the Adukrom and Asawasi communities. The findings showed that majority of the respondents from Adukrom and Asawasi strongly agreed that free community based computer training should be promoted. Also, majority of the respondents from Adukrom strongly agreed that free access to PC s and internet should be promoted whiles majority of respondents from Asawasi agreed that free access to PCs and internet. Again, most of the respondents from Adukrom were neutral that technical support should be promoted whiles most of the respondents from Asawasi agreed that technical support should be promoted. Furthermore, majority of the respondents from Adukrom and Asawasi strongly agreed that free or low cost digital literacy courses should be promoted. More so, most of the respondents from Adukrom and Asawasi strongly agreed that shared Wi-Fi or internet access from LAN should be promoted. Additionally, majority of the respondents from Adukrom and Asawasi strongly agreed that free or low cost access to ICT services and e-resources should be promoted. It was discovered that majority of respondents from Adukrom gave no response to the question whiles majority of the respondents from Asawasi indicated that that the ICT centre promote their services very

often. Again, majority of respondents from Adukrom gave no response to the question whiles majority of the respondents from Asawasi indicated that the quality of service provided by the ICT centre was acceptable.

6.2.6 Perceived Benefits of Digital Inclusion

The study found out about the perceived benefits of DI to the people of Adukrom and Asawasi. It was discovered that respondents gained several benefits by being digitally included. The findings revealed that majority of the respondents from Adukrom and Asawasi agreed that DI promotes communication. Also, majority of the respondents from Adukrom and Asawasi strongly agreed that DI promotes quality education. Again, majority of the respondents from Adukrom and Asawasi strongly agreed that DI promotes self-sufficiency. Furthermore, majority of the respondents from Adukrom and Asawasi were neutral that DI promotes social freedom. More so, most of the respondents from Adukrom and Asawasi strongly agreed that DI creates employment. Majority of the respondents from Adukrom and Asawasi agreed that DI reduces isolation. Additionally, majority of the respondents from Adukrom and Asawasi agreed that DI increase societal participation. Finally, majority of the respondents in Adukrom strongly agreed that DI creates information and knowledge based society whiles majority of respondents in Asawasi agreed that DI creates information and knowledge based society.

6.2.7 Challenges in the Use of ICT Centres

The sixth objective was to find out the challenges people face in using the AIC and ACIC. The findings revealed the challenges individuals faced in the use of the ICT centres were; poor computer skills, poor network connectivity, insufficient working

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hours, lack of ICT policy, virus threat , power outages and inadequate computers. The managers also added that they lacked the necessary equipment and facilities which make users of the centre face certain challenges whiles using the centre.

6.3 Conclusion

As a result of the rapid transformation of information in creating knowledge based societies, the world has become more alert on the important role ICT plays in development. CICs have been established by developed and developing countries to provide IT services to individuals in their communities. Technology has taken over the way we do things on daily basis, from shopping, to bank transactions, to payment of bills. Mobile devices such as phones, tablets, smart watches, televisions, and laptops have become part of human life and therefore people in communities must become digital literates to fit into today's society. The use of ICT centres has the ability to bring enhancement in the lives of people by creating easy access to information. Individuals would adopt and use ICT centres when computer literacy skill is present. This implies that training plays an central role in gaining the required skills to use ICT centres. Despite the enormous challenges with the use of ICT centre, there are challenges. Some of these challenges are poor computer skills, poor network connectivity, insufficient working hours, power outages and inadequate computers.

6.4 Recommendations

The following recommendations were made to help promote DI in the Adukrom and Asawasi community.

Firstly, the managers of the centre should conduct a research to find out the needs of the community in adopting and using technology. The centre should do more advertisement on TV, radio and social media platforms to promote the centre and enlighten individuals about the type of services they offer which would also increase awareness of the AIC and ACIC. The ICT centres should also provide services that would satisfy needs of users.

Secondly, training plays an important role in gaining the required skills to use ICT centres. Therefore the managers of the ICT centres should organize training sessions frequently for individuals within the community so that they can have the requisite skills in order to utilize the ICT centre and other IT devices.

Thirdly, the Municipal Assembly, policy makers and all stakeholders should design strategies that would help them keep track and do follow ups on the running of the ICT centres after establishment.

Furthermore, the managers of the centres must ensure that a general renovation is done to revamp the ICT centre so that individuals can have a user friendly environment whiles using the centre. There is a need to also provide basic IT equipment like printer, scanner, projector, white board and internet connection which would improve the services provided by the AIC and ACIC.

Again, the managers of the centres should also integrate local content into the information they provide so that individuals who cannot read and write in English can use the ICT centre with ease.

Also, the managers of the centres should provide sufficient working hours to enable individuals who are not able to use the centre during the regular sessions have access to the centre to make maximum use of the resources which can also generate additional income to run the centre.

Additionally, the centre should provide wireless connections so that individuals can use the centre away from cable connected PCs. Since the ICT centre can accommodate approximately 40 people per session, the wireless prevent overcrowding of the centre.

6.5 Areas of Future Study

The study investigated promoting DI in Ashanti region by assessing the Adukrom ICT centre and the Asawasi community ICT centre. There is a need for further research to be conducted on promoting DI in other regions using different ICT centres since the findings of this study is limited and cannot be over generalized. Similarly, a further research could be conducted on DI for sustainable development in Ashanti region.

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APPENDIX A

QUESTIONNAIRE

UNIVERSITY OF GHANA, LEGON

DEPARTMENT OF INFORMATION STUDIES

The researcher is an MPhil student of the Department of Information Studies conducting a research on the topic **"Promoting Digital Inclusion for residents in Ashanti Region: Assessment of Adukrom ICT Centre (AIC) and the Asawasi Community ICT Centre (ACIC)".** The purpose of this research is to examine the role of Adukrom ICT centre and Asawasi community ICT centre in promoting digital inclusion and recommend ways of promoting digital inclusion in the Adukrom and Asawasi community.

I kindly ask for your time to complete the questionnaire based on your experience. Please be assured that any information provided would be kept with utmost confidentiality. Thank you for your participation.

Please answer the following questions by ticking the appropriate options.

SECTION A: BIOGRAPHIC DATA

1. Gender: Male ( )   Female ( )

2. Age: 15-19 ( ) 20-24 ( ) 25-29 ( ) 30-34 ( ) 35-39 ( ) 40 - 44 ( )

3. Educational Level: Primary ( )   JHS ( )   SHS ( ) Tertiary ( )   Other ……………

4. Marital Status: Single ( )   Married ( )   Widowed ( )   Divorced ( )   Separated ( )

5. Employment Status: Employed ( )   Unemployed ( )

6. Religion: Christianity ( )   Islamic ( )   African Traditional Religion ( )   Other……

7. Community: Adukrom ( )   Asawasi ( )

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SECTION B: AWARENESS OF ICT CENTRES

8. Are you aware of the ICT centre in your community?

Yes ( )   No ( )

9. If "Yes", how did you get to know?

Radio ( )   Television ( )   Friends ( )   Others ………………..

10. Which of the following services is provided by the ICT centre in your community?

SN	Services	Available	Not Available
1	Photocopying		
2	Printing		
3	Typing		
4	Scanning		
5	Training		
6	Job coaching for students		
7	Internet service		
8	Wireless access		

Others (Please specify)………………………………………………………………

SECTION C: EXTENT OF USE OF ICT CENTRES

11. How often do you use the ICT centre in your community?

Always ( )   Very Often ( )   Sometimes ( )   Rarely ( )   Never ( )

12. How long have you been using the ICT centre in your community?

Less than 1 year ( )   1 year ( )   2 years ( ) 3 years and above ( )

13. Why do you use the ICT centre in your community?

It's close to me ( )   I don't pay money ( ) It is the only ICT centre in my community ( )

Others……………………………………………………………………………….

14. What do you use the ICT centre for?

Browsing ( )   Entertainment ( )   Research ( )   Training ( )   Others………………..

15. Which of the following ICT devices are available or not available in the ICT centre in

your community?

SN	Devices	Available	Not Available
1	Desktop computer/ Laptop		
2	Scanner		
3	Printer		
4	Photocopier		
5	Projector		
6	E-white board		
7	Webcam		
8	Headset		
9	Multifunctional devices		
10	Tablet		

Others (Please specify)……………………………………………………………………

SECTION D: COMPUTER LITERACY SKILLS AND USE OF CENTRES

16. What is your level of computer literacy?

Basic ( )   Intermediary ( )   Advanced ( )

17. What is your level of knowledge in the following?

SN	Computer skills	Excellent	Good	Fair	Poor
1	Typing				
2	MS Word				
3	MS Excel				
4	MS Power Point				

Others (Please specify)……………………………………..………………........................

18. Which of the following digital devices do you have?

SN	Digital devices	Available	Not Available
1	Desktop computer		
2	Smart phone		
5	External hard drive		
6	Laptop		

Others (Please specify)…………………………………………………........................

19. Is computer literacy skill important in using ICT centre?

 Yes ( )   No ( )

20. If "Yes", how is it important?

………………………………………………………………………………………………

………………………………………………………………………………………………

SECTION E: ICT CENTRES AND DIGITAL INCLUSION

21. Kindly indicate the extent to which you agree or disagree with the following statements

on the role of ICT centres in promoting digital inclusion.

(SA) Strongly Agree, (A) Agree, (N) Neutral, (D) Disagree, (SD) Strongly Disagree

SN	The role of ICT centres in promoting digital inclusion	SA	A	N	D	SD
1	Free community based computer training					
2	Free access to PCs and internet					
3	Technical support					
4	Free/low cost digital literacy courses					
5	Shared Wi-Fi or internet access from Local Area Network					
6	Free/ Low cost access to IT services and e-resources					

Others (Please specify)……………………………………………………...................

22. How often does the ICT centre in your community promote it services?

Always ( )   Very Often ( )   Sometimes ( )   Rarely ( )   Never ( )

23. Rate the quality of service provided by the ICT centre in your community?

Very good ( )   Good ( )   Acceptable ( )   Poor ( )   Very poor ( )

SECTION F: PERCEIVED BENEFITS OF DIGITAL INCLUSION

24. The following are some perceived benefits of digital inclusion. Please tick the

appropriate column where applicable.

(SA) Strongly Agree, (A) Agree, (N) Neutral, (D) Disagree, (SD) Strongly Disagree

SN	Benefits of digital inclusion	SA	A	N	D	SD
1	Improves communication					
2	Promotes quality education					
3	Promotes self sufficiency					
4	Promotes social freedom					
5	Creates employment					
6	Reduce isolation					
7	Increases societal participation					
8	Creates information and knowledge based society					

Others (Please specify)…………………………………………………………………………

SECTION F: CHALLENGES IN THE USE OF ICT CENTRES

25. Kindly indicate the extent to which you agree or disagree with the following statements

by ticking in the appropriate column.

(SA) Strongly Agree, (A) Agree, (N) Neutral, (D) Disagree, (SD) Strongly Disagree

SN	Challenges in the use of ICT centres	SA	A	N	D	SD
1	Poor computer skills					
2	Poor network connectivity					
3	Insufficient working hours					
4	Lack of ICT policy					
5	Virus threat					
6	Power outages					
7	Inadequate computers					

Others (Please specify)………………………………………………………….......................

26. What in your opinion, do you think can be done to improve on the facilities of the ICT

centre in your community?

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APPENDIX B

INTERVIEW SCHEDULE

UNIVERSITY OF GHANA, LEGON

DEPARTMENT OF INFORMATION STUDIES

This is an interview schedule to assist an MPhil student of the Department of Information Studies to collect data on **"Promoting Digital Inclusion for residents in Ashanti Region: Assessment of Adukrom ICT Centre (AIC) and the Asawasi Community ICT Centre (ACIC)".** I kindly ask for your time to answer my interview questions. Please be assured that any information provided would be kept confidential. Thank you for your time.

1. How do you create awareness of the ICT centre?

2. How often do individuals in the community use the centre?

3. Why do people of the community use the centre?

4. Is computer literacy skill a prerequisite in using ICT centres?

5. How often does the centre promote it services to the community?

6. How often does the centre provide training services?

7. Does the centre have a policy on the use of ICT?

8. Does the centre enforce polices on the use of ICT?

9. What is your source of funding?

10. Has the centre been beneficial to individuals in the community?

11. What are some of the challenges people face in the use of the ICT centre?

APPENDIX C

LETTER OF INTRODUCTION

UNIVERSITY OF GHANA
DEPARTMENT OF INFORMATION STUDIES
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

Ref. No.:...

March 14, 2019

The Manager
Adukrom ICT Centre
Adukrom-Kumasi

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you **Miss. Mercy Abah**, an MPhil student of the Department of Information Studies. She is researching on the topic: **"Promoting Digital Inclusion for residents in Ashanti Region: Assessment of Adukrom ICT centre (AIC) and the Asawase Community ICT centre (ACIC)"**. Mercy is expected to submit her Thesis as part of the requirement for the MPhil programme.

We would appreciate any support you can give her.

Yours faithfully,

Dr. Emmanuel Adjei
(Head of Department)

COLLEGE OF EDUCATION

P. O. Box LG 60, Legon, Accra, Ghana.
• Tel. +233 (0) 303 937 957   • Email: dislegon@ug.edu.gh   • Website: www.coe.ug.edu.gh

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APPENDIX D

LETTER OF INTRODUCTION

UNIVERSITY OF GHANA
DEPARTMENT OF INFORMATION STUDIES
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

Ref. No.:...

March 14, 2019

The Manager
Asawase Community ICT Centre
Asawase-Kumasi

Dear Sir/Madam,

LETTER OF INTRODUCTION

This is to introduce to you **Miss. Mercy Abah**, an MPhil student of the Department of Information Studies. She is researching on the topic: **"Promoting Digital Inclusion for residents in Ashanti Region: Assessment of Adukrom ICT centre (AIC) and the Asawase Community ICT centre (ACIC)"**. Mercy is expected to submit her Thesis as part of the requirement for the MPhil programme.

We would appreciate any support you can give her.

Yours faithfully,

Dr. Emmanuel Adjei
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