

Impacts of a Telecentre on a Rural Community in Kenya

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ABSTRACT

Telecentres are an important resource in enabling millions of people in rural areas to participate in their development while bridging the global digital divide (Rogers & Shukla, 2001). Since most of these people in the rural areas are unlikely ever to own their computers, community telecentres increase access to ICT and are viewed as community resources that offer access to information and other services that community members need to make informed decisions to improve their livelihoods. Championing of the telecentre model by governments and international development partners has increased in developing countries. However, there is little information on how rural communities benefit from telecentre projects and whether information accessed through telecentres impacts their lives and livelihoods. The study set to find out whether information obtained from the Telecentre improves people's welfare. Finally, the study looked at the prospects of telecentres in rural development. The study was based on fieldwork carried out in Nguruman Telecentre through evaluative and descriptive research designs and used both ethnographic the participatory research approach. This study shows there is a complex relationship between ownership, management, and sustainability of telecentres that needs further research. Nevertheless, community participation in telecentre activities is an essential element for the sustainability of such initiatives at the community level. Key informants pointed out and affirmed community participation. This is what improves local ownership according to Etta & Parvyn-Wamahiu (2003), which brings about the success and sustainability of the telecentre. Ownership suggests control but it is evident that the Nguruman community was not in control of the CKC. Instead, the CKC staff and volunteers who were employees of Arid Land Information Network- Eastern Africa usually had more say in the decisions affecting the daily activities of the center. Telecentres have a definite role in the development process. They play an important role in information and education, which is key to development and seen as an important human right. Therefore there is a need to provide support in initiating, maintaining, and running telecentres. This study suggests forging partnerships (also referred to by a key informant as public-private partnerships - PPPs) for the financial sustainability of telecentres in rural communities. The design of telecentres should have non-users in mind. This requires taking into consideration the practical needs and realities of non-users who have reservations about using the centers, whether this is because of inappropriate location, access in terms of opening hours, lack of trained staff, and poor publicity.

Keywords: Telecentre, Rural Community, Rural Areas, ICTs, Kenya

I. INTRODUCTION

Information and communication technologies (ICTs) are being taunted as vehicles for empowering individuals, particularly in disadvantaged rural communities in developing nations where they have been promoted through community telecentres (Rogers & Shukla, 2001). This is because ICTs expand global economic and social potential. For instance, having access to ICTs enables farmers to boost their revenues by readily communicating with customers and checking prices frequently (Grace, Kenny, & Qiang, 2003). As a result, numerous developing nations are making a variety of measures to make ICTs accessible to people. The building of telecentres, which provide public access to ICTs for educational, personal, social, and economic development, is one of the most popular ways that this is being accomplished (Kumar, 2002).

Telecentres are not an especially recent development (Bailur, 2007). In reality, according to Roman & Colle (2002), the concept of a community sharing computer technology first appeared in Scandinavia in the 1980s with the advent of the tele-cottage. The creation of tele-cottages was to combat the information society's marginalization of isolated rural areas. Thus, telecentres are claimed to be superior versions of tele-cottages equipped with better technology, such as mobile money transfer, scanning, printing, and photocopying services, as well as informational services for the local populace. Due to the many functions, they perform in the development sector, they are tools for development.

Numerous top development organizations launched telecentre initiatives throughout third-world nations in the hopes of bridging the digital divide while assisting individuals in enhancing their social capital, social mobility, and

standard of living (Bailur, 2007). A telecentre is an establishment that provides public access to computers, the internet, and other digital technologies so that individuals can research, create, learn, and interact with others. The evaluation task, however, becomes much more difficult at this point since ICT may facilitate a variety of outcomes that are difficult to correlate from an attributional or cause-and-effect standpoint. Additionally, using ICTs can have a variety of positive effects, some of which may be unanticipated. Pade and Sewry (2012), assert that "the benefits and challenges associated with ICTs in rural areas need to be questioned in terms of relevance and actual impact of such programs on rural development". According to Mthoko and Pade-Khene (2017), there are no clear indications on what aspects of the impacts of a project are assessable, with the focus on how the assessment should occur.

In Kenya, as with the rest of the world, ICTs have the potential to aid the accomplishment of social outcomes such as increased availability of education and healthcare, improved civic dialogue, and citizen participation in development processes in the country. However, despite the many challenges facing Kenya and Eastern Africa as a whole, development partners have made ICTs a reality, especially through community telecentres. Telecentres, known by various names, aim at transforming and improving the social and economic environments of rural livelihoods as well as empowering citizens in the view of development. This is by opening a pathway for rural communities to freely access information for development which is a grand step in bridging the gap between the information-rich and information-poor (ALIN-EA, 2005; Bailey, 2009).

However, the establishment of telecentres comes with it great challenges such as the availability of affordable technology, use of the facility remains a problem due to security and maintenance, connectivity is a struggle, reliability of affordable power supply, and, weak policies and regulations regarding rural ICT initiatives. The economic, political, and social sustainability of telecentres has been noted as a key issue with important inter-relationships (Jhunjhunwala, 2008; Bailey, 2009).

As was already mentioned, the purpose of creating telecentres is to give everyone access to ICTs while also fostering the growth of rural areas by bringing the advantages of ICTs to them. In nearby communities, making use of the telecentre's resources and gaining something from them is the only way to meet these goals. There is an assumption that everyone in the community will use and adopt telecentres (Kapondera & Namusanya, 2016), but their existence in the community does not result in utilization, and usage does not always convert into advantages. Therefore, it is crucial to look into how communities utilize and profit from telecentres to understand how beneficial they are (Soriano, 2007).

1.1 Statement of the Problem

Telecentres have become the new engine for economic growth in rural communities. As a result, ICT greatly boosts the growth of national economies by empowering people and enhancing community capacity (Yonah and Salim, 2010). Telecentres hasten the implementation of information access in rural areas, reducing the digital divide and raising the socioeconomic standing of locals. Villagers cannot frequently acquire knowledge and information due to ignorance in the global information society. Utilizing pertinent information would increase agricultural productivity among other things (Lwoga & Ngulube, 2010). However, relatively there is little information on how telecentres serve rural populations and whether the information they may access through telecentres affects their quality of life and ability to support themselves. Furthermore, the communities where telecentres are located have questioned their efficacy, particularly in rural areas where a high percentage of the population is still illiterate. There have been reports on the underutilization of these telecentres' services, some of which have been linked to the population's information illiteracy and others to the usefulness of the provided content.

II. LITERATURE REVIEW

2.1 ICT in Bridging Digital Divide

One of the most significant approaches to bridging the digital divide within nations and between nations as well as increasing ICT access, especially in rural, urban, and peri-urban areas has been the creation of telecentres (Rogers & Shukla, 2001). Telecentres came to the international scene less than 25 years ago. However, they have only begun attracting the interest of academics recently. The first computer-sharing technology emerged in the 1980s, particularly with the introduction of the tele-cottage in Scandinavia. The main purpose of the tele-cottages at that time was to fight the marginalization of remote rural communities in the anticipated information society. In the 1990s, with the emergence of the Internet, many were able to get their computers and connections to the digital world however many others depended on a sort of shared access. As a result, a new kind of public access emerged. By 2002, cybercafés, information access points (IAP) and telecentres had emerged (Rega, 2010; Roman & Colle, 2002a).

A telecentre is a shared structured ICT facility that contains a combination of new and old ICTs (television, telephone, books, and computers with internet connectivity, video, and facsimile). It is a public place where people can access ICTs that enable them to gather information, create, learn and communicate while developing essential digital skills. They offer community members the ability to use and publicly share ICTs to support community, economic, educational, cultural, and social development through reducing bridging the digital divide, creating economic opportunities, promoting health and other development issues. Over the years, referred to by different names in terms of geography and purpose. They are also differentiated by their funding models and goals (Etta & Parvyn-Wamahiu, 2003; Rega, 2010; Rothenberg-Aalami & Pal, 2005).

Attempts to define and classify telecentres have adopted different criterion (Owen & Darkwa, 2000; Roman & Colle, 2002b; Gomez et al., 1999; Colle, 2000; Jensen, 2007). Townsend et al. (2001) assert, “Telecentres may differ in terms of size, services offered, the technology used, and available infrastructure, as well as location, ownership, and relationship with other public facilities” (p. 2). In this classification attempt, the telecentre models consider various levels of local development for instance available infrastructure, and economic development, and consider community necessities and the available resources in different settings in the country (Townsend et al., 2001).

This classification according to Etta & Parvyn-Wamahiu (2003) is quite difficult to comprehend because, at one point, its base is on the location, and at another; has a basis on the nature of ownership and types of services. However, ‘the classification attempted by Colle (2000) shows the complexity and identifies the dimensions that any taxonomy would do well to consider’ (p. 6). This classification is the most efficient way of distinguishing telecentres (Rega, 2010; Etta & Parvyn-Wamahiu, 2003).

Further, Roman & Colle (2002a) identified that telecentres tend to be run by governmental or non-governmental organizations (NGOs), provide for low-income clientele, and are community development driven. In addition, a typical telecentre offers a wide range of communication services related to the community’s needs, some of which are free or subsidized by external organizations in this case governmental organizations or NGOs. Initial telecentre projects were almost exclusively donor-managed and consequently, issues of financial and social sustainability arose (Bailur, 2008). This is the case with some telecentres to date.

Arguably, Etta & Parvyn-Wamahiu (2003) argue that to arrive at an agreeable and comprehensive classification of telecentres, a lot needs to happen. In addition, while there seems to be a general agreement about the basic functions of telecentres, debates around the nature of ownership, management and operations remain. Suggestions that ownership, management, and operations evolve and three stages have been described. Fuchs (as cited in Etta & Parvyn-Wamahiu, 2003) identifies the three stages as investment, contract, and user fee.

Over the years, efforts to promote universal access to ICTs in the form of community telecentres have become a policy goal for many African governments and international organizations as ICTs are a vital element of the newly emerging global information society (Parkinson, 2005; Etta & Parvyn-Wamahiu, 2003). Kumar and Best (2006) argue most telecentre evaluations have focused more on their functional aspects such as the technical, financial, and sustainability rather than their social impact. On the other hand, those that have focused on the social impact of telecentres have looked at it through anecdotal evidence and others on poverty reduction. There exists no agreed-upon evaluation of the impact of telecentres given the variety of experiences and communities served by these telecentres (Rothenberg-Aalami & Pal, 2005).

2.2 Telecentres as Ways of Adopting a Participatory Approach to Development

Participation according to Colle (2001) has very useful value for telecentre initiatives. With the widespread interest in bridging the digital divide, issues of broad-based community participation may become a major component in telecentre mandates (Roman & Colle, 2002b). However, if there is a genuine demand and if people perceive the services offered as important, only then will participation work (Conroy, 2006)

Studies done by several researchers on telecentre evaluations (McConnell, 2001) reveal that the success of the facilities and the level of support from the community are closely related. One study in particular highlights the link that exists between smaller communities of less than 2000 people and telecentre initiatives and reveals that the community valued the initiative more as compared to communities with a larger population. Members of the small isolated communities felt empowered to participate in the information society.

In essence, telecentres are shared public facilities to provide telecommunication services to people who do not have them available individually due to various reasons. However, ensuring that communities understand the value and use of telecentres remains a challenge. Telecentres are the most visible tools for bridging not only technological gaps but educational, economic, and social divides as well, all of which are precisely at the heart of the obstacles to participation in telecentre initiatives (Roman & Colle, 2002b).

Roman and Colle (2001) argue it is important to note that the concept of participation is multi-dimensional. Considering and analyzing every layer of the concept when dealing with telecentre development is important, as well as, identifying individual participation and collective participation approaches in telecentre initiatives. Individual participation entails the use of the telecentre by a specific community and the involvement of the community members in the telecentre activities. Collective participation on the other hand entails determining who will be involved in the planning and management of the telecentre. Generally, this involves community ownership and there are community steering committees that have the responsibility of setting the direction of the telecentres and supervising the work of the centers managers. This occurs in a few countries like South Africa and Canada.

Conscientious attention to participation is called for because it yields benefits in the assessment of information needs, planning, and operations (Roman & Colle, 2002c; Bailur, 2008). It gives a sense of community ownership, provides indigenous wisdom, helps community values, and provides important resources at favorable costs such as volunteers or technical expertise. Further, Kanungo (cited in Bailur, 2008) states collective ownership implies that everyone has access to the telecentre initiatives regardless of their social status.

2.3 Challenges to Participation in Telecentre Initiatives

Challenges to participation in telecentres, according to Roman & Colle (2001), fall under both individual and collective participation. Social obstacles revolve around gender, age, cultural issues, literacy, education, language, locality, and technophobia (Roman and Colle, 2001; Prado, 2009). The perceived role of women in society impedes their access to and use of ICTs initiatives These barriers exist widely however they are more severe among African women as well as in some parts of Asia and Latin America where they are more often resilient to change (Roman & Colle, 2002b).

In many telecentre initiatives throughout the world, the youth are the largest part of the population using computers and Internet opportunities. An IDRC telecentre study in Latin America, Uganda, and Mozambique (cited in McConnell, 2006) show that most of the users were students between the age of 15 and 34 years and the majority of these were male while the minority was female (McConnell, 2006; Etta & Parvyn-Wamahiu, 2003). Arguably, Colle (2001) identified that women in many parts of the world "...do not feel welcome in telecentres because of the "maleness" of the environment and the accompanying intimidation" (p. 12). Intimidation impedes the participation of both groups in the telecentre initiative (Roman & Colle, 2002a). In yet another study done by Etta & Parvyn-Wamahiu (2003), telecentre users in Africa have been disadvantaged based on gender, age, education, literacy levels, and socioeconomic status. There was a striking absence of the elderly and disabled population at the telecentres. In their study, fewer women use the telecentre services, which confirmed the poor standing of African women in science and technology. This issue is also a familiar reality in Kenya.

Odame (2005) argues, that for feminists, the history of activities relating to ICT4D has been perceptive given the potential for manipulation of propaganda messages and male-dominance of media structures.

Furthermore, ICTs are not unique in the sense that women are lacking relative to men in access to all modern types of technology. Women especially those in the rural areas have less education, time, income, and mobility and experience religious or cultural limitations that hinder their access to and use of technology. In Nguruman CKC, for instance, the majority of the users are young men, and this impeded participation by women (old and young). There was a suggestion that separate locations or rooms for the women because they feel intimidated in the presence of the young men. Culture promotes this view, which sees it as inappropriate for women to mix with young men.

Technophobia according to Roman & Colle (2001) is a major obstacle that prevents people from getting involved in telecentre activities and directly benefiting from the use of ICTs. This is partly due to the lack of training of individuals on the use of technologies. There is therefore the need to put emphasis on value addition to the potential services provided by the ICTs. In addition, the community needs to know that the telecentre exists and the telecentre activities should be able to offer what is relevant to the community as well as meet their communication and information needs.

Rural populations particularly in Africa face a set of challenges that impede their access and use of telecentre initiatives. The establishment of telecentres comes with it great challenges such as availability of affordable technology, use of the facility remains a problem due to security and maintenance, connectivity is a struggle, reliability of affordable power supply, and, weak policies and regulations regarding rural ICT initiatives. The economic, political, and social sustainability of telecentres are key issues with important inter-relationships (Jhunjhunwala, 2008; Bailey, 2009). In Nguruman for instance, there is no electricity through solar power available in homesteads that can afford it. The nearest township with one dusty road in poor condition, and inefficient transport system, and prone to natural catastrophes such as the flooding of its river sources is the only link to electricity. (Maruti & Mwalili, 2003).

Political obstacles to participation can create power struggles as identified by Roman & Colle (2001) and this restrains the participation of some people. A clear example is the operation and ownership wrangles between World Corps Kenya and ALIN-EA about Nguruman CKC that have left community members wondering whether the center is there to support the community or for benefiting the organizations in terms of more donors funding. Chapters four and five further discuss this. Other factors noted by Prado (2009) limit the optimal adoption of ICT initiatives and stem from telecommunication infrastructures, which do not reliably support connectivity; there is scarce skilled personnel on the ground capable of operating and maintaining the technology, and limited affordability of ICT among poor populations.

2.4 Sustainability of Telecentre Initiatives

Throughout the world, telecentres are struggling to survive and over the last ten years, the sustainability of telecentres has been at the forefront of debates among practitioners and academics in the development discourse (Bailey, 2009; Rega, 2010). Sustainability is "...the ability of a project or intervention to continue in existence after the implementing agency has departed" (Bailey, 2009, p. 1; Rega, 2010, p. 36). Further, in sparsely populated areas, sustainability is difficult to accomplish since infrastructure may be lacking and local demand is scattered, and has inadequate purchasing power. Arguably, for telecentres to achieve and gain tangible benefits for the poor, both in rural and urban settings, state subsidies will be essential for the start-up phase, and subsequent governmental funding of public services will be required (Proenza, 2001).

Sustainability issues are on financial sustainability in terms of the ability of the telecentre to generate enough funds to cover its expenses (Fillip & Foote (2007). Additionally, consideration of social, cultural, political, and technical sustainability is important. The financial and social sustainability of telecentres remains a key obstacle to digital inclusion projects. However, "whether telecentres remain an influential component in the community development agenda in the long run, however, depends on how they respond to the urgent need to build social and financial sustainability capacities" (Mayanja, 2006, p. 2; Bailey, 2009).

Recently, the issue of sustainability has come to be seen as more complex and multi-dimensional "dependent on more than just the availability of financial resources". Further, issues commonly associated with the sustainability of telecentres include the operating environment, ownership and management styles, community participation, the relevance of the services, and content (Rega, 2010, p. 37; Etta & Parvyn-Wamahiu, 2003). Ariyabandu (2009) argues that the present challenge is developing the telecentres further into sustainable knowledge centers with the involvement of NGOs, government, and other key stakeholders.

The role of telecentres in sustainable development is underutilized despite their existence for many years in the development field. Ariyabandu further argues that many stand-alone telecentres "have not been able to adequately share information and experience, especially among the poor and the disadvantaged communities. This has reduced the demand and sustainability of ICT access points to continue serving the poor" (p. 1). Fillip & Foote (2007) argue that providing locally relevant services should form the basis for sustainability. Basis should be on assessing the community's needs specific services, and content and developing the business models and applications.

III. RESEARCH METHODOLOGY

The study adopted the Ethnographic Approach. In this design, the study uses the main tools and principles of ethnographic research. This research also has certain elements of participatory research that are important in providing ways to meet the needs of the community and promote participation, which is often associated with social change (Roman & Blattman, 2001; Mayoux, 2006; Kemmis & McTaggart, 2008). There was the use of social mapping and developing Communicative ecology. The collection of data is from participant observation in Nguruman during June and July 2010. Observation was on the relevant formal and informal events taking place in the CKC and the community. Documentation of research is a primary component of the ethnographic research process. Achieving this is through keeping a clear and detailed record of all the data gathered in the form of field notes, transcripts, diagrams, maps, charts, and other material. Consequently, analysis is a continuous part of the research process that can extend indefinitely and involves coding, organizing, and exploring the data collected.

IV. FINDINGS & DISCUSSIONS

4.1 Nguruman CKC

Findings show that the CKC offers services such as basic computer training, Internet access, e-government services, and multi-media services such as videos on farming techniques, online market information especially for the

farmers, library services, and publications on various development issues, and email services. Printing and phone charging services are also available. As a result, Nguruman CKC meets specific needs of certain groups in the community, for instance, the youth and some farmers and teachers (Colle, 2000; Rega, 2010). The figure below presents a model of key variables used to describe Nguruman CKC adopted from Colle (2000).

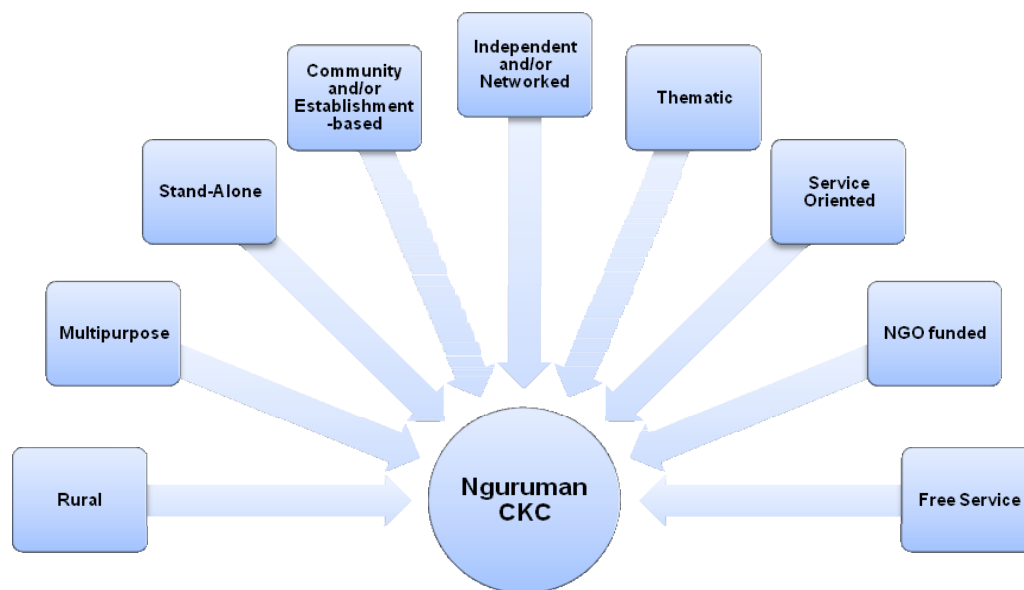


Figure 1. Description of Nguruman CKC

From my observation and experience, the ALIN-EA network of telecentres is an informal group that uses occasional meetings to connect people working in telecentres. They also have formal links to offer specific services to help their members with daily telecentre tasks, for instance, business management training, and technical troubleshooting (adopted from Phillip & Foote, 2007). As indicated in the literature review, there is an added advantage for telecentres that are networked because “members come together to learn from each other and cooperatively access services” and through this, the centers become “more effective, sustainable and valuable to the communities they serve” (Phillip & Foote, 2007, p. 141). The evolution of the CKC below discusses this.

From my observation, there are two types of centers in Nguruman. Gomez et al. (1999) refer these as basic telecentre and a telecentre franchise. A basic telecentre is a “typically small independently operated community enterprise [in the rural areas] with a small number of computers and dial-up connections to a wide area network and the Internet. Used by the general public for becoming computer literate, sending email, and searching Web sites. Minimal marketing information within the center, and is heavily consumer-driven. They are generally subsidized by the government or non-government organizations and are intended to be a public service with minimal or no fees” (Gomez et al., 1999, p. 3; also see Etta & Parvyn-Wamahiu, 2005).

The telecentre franchise is “a series of interconnected telecentres, which are centrally coordinated but independently owned and operated” (Gomez et al., 1999, p. 4). The CKC is usually under supervision by Arid Lands Information Network-Eastern Africa which offers financial support occasionally as well as technical support. A telecentre franchise according to Gomez et al. (1999) runs like a small business that will eventually become financially and technically independent. Unlike the other centers under supervision by ALIN-EA, the CKC does not run like a small business because it does not charge any fees for its services. Originally, it did until it operated under ALIN-EA’s approaches. Based on the findings from the ALIN-EA manager, this will soon change because very soon community members will be paying for services such as printing and photocopying. However, the CKC does house a small number of computers for the public to access and dial-up connections to Internet service providers as Gomez et al. (1999) identify.

4.2 Evolution of Nguruman CKC

While there seems to be a general agreement in the literature about the basic functions of telecentres, debates about the nature of ownership, management, and operations remain (Etta & Parvyn-Wamahiu, 2005). Telecentre

ownership, management, and operations evolve through three stages as Fuchs (1997) has described the investment, contract, and user fee stages.

The investment stage characterizes the early status of the telecentre. This is where the NGO forms collaboration with a local community to develop the locals' capacity by supporting them to participate in the information society. The telecentre has the full support of the organization in financial and technical terms and by providing training for local partners and stakeholders of the community as a way of demonstrating practical utility. When the telecentre gets to the contract stage, this indicates that it has gained autonomy from the organization and begins to make contractual arrangements with other organizations and institutions such as schools, government offices, and hospitals to build a network of clients for providing services and technical support. Finally, the user-fee stage indicates that the telecentre is non-dependent on the organization as the community is aware of its benefits and pays for them willingly. (Etta & Parvyn-Wamahiu, 2005).

This evolutionary view means that it only takes a matter of time for the telecentre to become an independent and self-sustaining facility (Etta & Parvyn-Wamahiu, 2005). However, this does not seem to be the case with the Nguruman CKC. World Corps Kenya established the CKC in 2003 as a pilot project. The project trained 15 youth imparting them the necessary skills in enterprise development, computers, renewable energy, and community development. This training enabled them to set up a four-community information center. The project aimed to empower the local communities by improving their access to information. The project was primarily donor-funded and World Corps Kenya financed and supplied the equipment (solar panels, laptops, pay phones, printers, and batteries for each center (Aked, 2006).

The skills and characteristics of the operator or manager of a telecentre are what determine the success or failure of the center (Fillip & Foote, 2007). From the findings, it is clear that ALIN-EA's approach of employing staff (field officers who are community outsiders) to operate and manage the center has had a lot to do with the ownership debates. The findings from the participants indicate that some community members encountered an unwilling staff and therefore lacked the interest to visit the center. Others feared confrontation by the staff, while some indicated that the staff only preferred helping those he knows. Some participants raised the issue of trust and suggested a community member they identify with and can trust should run the CKC.

According to some participants, the CKC staff cannot be trusted. Phillip & Foote (2007) suggest the involvement of local ICT champions and infomediaries who will play a central role in facilitating access and effective use of the telecentre. Infomediaries play a central role in "advocacy, peer learning and creating vital demand for telecentre services" (Phillip & Foote, 2007, p. 25). A local ICT champion is an individual who is aware of the objectives of the telecentre and embraces them. This is someone who supports technology-based solutions and is a trusted community member (Phillip & Foote, 2007). Fuchs (1997) suggests that this role should be filled by a woman and I agree based on the findings that women are left out in terms of access and use of the center. Fuchs (1997) argues that an individual who learns computer skills to become a telecentre manager provides an obvious demonstration effect in the community. In addition, learning how to work with technology has to be made simple and accessible, which requires sociability and communication skills coupled with empathy and other-directedness. This does not mean that women are better telecentre managers than men, it is simply the fact that women, in most cultures, are sociable and empathetic (Fuchs, 1997) and other women are more likely to visit the telecentre as a result (Tacchi & Martin, 2008) therefore dealing with inequalities in ICT access and use.

4.3 Access to and Use of the Telecentre

This study demonstrates that telecentres have the potential to become important enablers to fight and reduce poverty reduction only if communities can adapt their applications to their ends. The concept of telecentres in rural areas has been based on enabling more people to use the ICTs, and the more they learn how to use them, the more they generate new innovative ideas. Findings from the key informants pointed out that accessing e-services such as e-Government, e-Education, and e-Health has contributed significantly to the poverty reduction process IN THE COUNTRY. This study did not see evidence of these advantages. Based on the findings from this study, the Nguruman CKC has the characteristics of a basic telecentre that acts as a community access point where people can use conventional ICT tools such as computers, newspapers, the internet, and telephone and it provides knowledge and training services such as basic computer skills. It has minimal information marketing, is heavily consumer-driven, and is a public service offering no fees.

Findings in line with the literature (Odame, 2005; Tacchi & Martin, 2008; Best & Maier, 2007) show that the gender gap in terms of meaningful access to ICTs remains. In Nguruman, very few women use the CKC. Women "do not feel welcome in telecentres because of the "maleness" of the environment and the accompanying intimidation" (Colle, 2007). Intimidation impedes the participation of the women in the telecentre initiative (Etta & Parvyn-

Wamahiu, 2003; Colle, 2007; Roman & Colle, 2002a). This is certainly the case in Nguruman. This study suggests the use of the female, local ICT champions, to provide access opportunities and develop tools and content specific to the priority needs of women (Gill et al., 2010).

The most common users of the Nguruman CKC are high school students or those who have just completed high school, all of whom are young men. In many telecentre initiatives throughout the world, the youth are the largest part of the population using computers and Internet opportunities. An IDRC telecentre study in Latin America, Uganda, and Mozambique by Etta & Parvyn-Wamahiu (2003; also cited in McConnell, 2006), shows that most of the users were students between the age of 15 and 34 years and the majority of these were male while the minority was female. The implication for this demonstrates that the CKC has become a male, youth information center rather than a community information center. Therefore, there needs to be a rethinking of the rationale of such projects to include the roles of infomediaries, which are key in facilitating access and effective use of the initiatives (Phillip & Foote, 2007).

Due to the contractual arrangements at the CKC, ownership issues emerged that eventually led to a broken partnership between the organizations and the establishment of a separate facility. Furthermore, participants expressed the need to have a willing and trusted person from within the community to run the center. The findings indicate that the telecentre was experiencing management problems in terms of weak management, as well as poor technical and social skills. As Phillip and Foote (2007) argue, “telecentre operators, local ICT champions, and infomediaries play a key role in facilitating access and effective use of telecentres. In many instances, the success or failure of a telecentre is rooted in characteristics and skills of the manager or operator” (p. 25).

Some community members expressed the need to have a similar center in the neighboring communities. As mentioned in Chapter One, the Nguruman sub-location comprises of Oloibortoto East and West areas (Kinyua et al., 1997), situated quite far from where the CKC is located. Roman & Colle (2002b) assert that if a telecentre is away from the usual community meeting points, it may impede participation (p. 4). This is the case with the Nguruman CKC. The greatest way for implementers of telecentre initiatives to be certain they are addressing the needs of the target communities is by engaging active participation of the community members in voicing their information and communication needs (Phillip & Foote, 2007). Roman & Colle (2002b) purport it is the community members that should decide the location of the telecentre, “in fact participating in an important decision related to the telecentre operation” (p. 4). As Conroy (2006) notes, a high level of community participation and ownership in the operation and use of a telecentre provides a major bearing on its success and sustainability. In his study, Conroy recommends that the management of telecentres need to develop a definite participation strategy in the planning stage. The guiding principle suggested is a people-centered program based on community ownership, which the community must endorse as a whole. This study reinforces this need.

One unanticipated finding was that some community members do not count themselves as part of the community has come from different tribal affiliations. Consequently, this perception hinders their access and use of the CKC. If we put it within the context of Sub-Saharan Africa where most formal colonial states were arbitrarily put together grouping different tribes into one nation, it brings in the question of how communities are created when an individual's affiliation is to his/her tribe. People from other tribal communities migrated to Nguruman for their economic advantage, which is their sole interest and not in being part of a wider community. However, it is ironic that the CKC was set up to help increase economic activity in terms of access to the market for goods, yet it does not seem to attract these “other” community members to serve their economic needs. This finding has important implications to take into consideration when establishing telecentres in such communities.

4.4 Sustainability of Telecentres

From my observation and the views of the participants, the sustainability of the CKC was constantly under threat ranging from weak management, to technical and infrastructural problems. Problems such as poor connectivity, computer failures, lack of enough power for more than two computers, unusable computers, and lack of printing paper/printer failures occur. In reviewing the literature, the financial and social sustainability of telecentres remain two of the key obstacles to digital inclusion projects: “whether telecentres remain an influential component in the community development agenda, in the long run, depends on how they respond to the urgent need to build social and financial sustainability capacities” (Mayanja, 2006, p. 2; see also Bailey, 2009).

The findings show that operations, management and ownership style, the relevance of the service and content as well as community involvement have influenced the sustainability of the CKC. The issue of sustainability as mentioned in the literature review (Rega, 2010; Etta & Parvyn-Wamahiu, 2003) is more complex and multi-dimensional relying on more than only financial resources. Further, issues commonly associated with the sustainability of telecentres include the operating environment, ownership and management styles, community participation, the relevance of the services and content (Rega, 2010, p. 37; also see Etta & Parvyn- Wamahiu, 2003, p. 32).



My study suggests that forging partnerships rather than doing it alone, community cohesiveness, and introducing income-generating models in the telecentres are important strategies for dealing with the sustainability issue. As the Nguruman CKC continues to exist, different social and financial sustainability problems emerge in the process. Therefore, the issue of sustainability is a continuous process rather than a one-off process. This concurs with the ideas of Baulch (2008) who found that the work of sustaining is an ongoing and constant process, dealing with the problems that emerge as an initiative evolves. “sustaining an initiative is a constant labor of firstly, attending to the myriad of problems that social and financial sustainability entails, both in and of themselves and, secondly, attending to the complex questions of how to most suitably marry these two” (p. 108). Such ongoing attention was absent in the CKC highlighting yet again the need for appropriate management at the center.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

This study shows there is a complex relationship between ownership, management, and sustainability of telecentres that requires further research. Nevertheless, community participation in telecentre activities is an essential element for the sustainability of such initiatives at the community level. Key informants pointed out and affirmed community participation. This is what improves local ownership according to Etta & Parvyn-Wamahiu (2003), which brings about the success and sustainability of the telecentre. Ownership suggests control but it is evident that the Nguruman community was not in control of the CKC. Instead, the CKC staff and volunteers who were employees of Arid Land Information Network- Eastern Africa usually had more say in the decisions affecting the daily activities of the center.

5.2 Recommendations

Telecentres have a definite role in the development process. They play an important role in information and education, which is key to development and seen as an important human right. Therefore there is a need to provide support in initiating, maintaining, and running telecentres. This study suggests forging partnerships (also referred to by a key informant as public-private partnerships - PPPs) for the financial sustainability of telecentres in rural communities. The design of telecentres should have non-users in mind. This requires taking into consideration the practical needs and realities of non-users who have reservations about using the centers, whether this is because of inappropriate location, access in terms of opening hours, lack of trained staff, and poor publicity.

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