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The Role of Telecentres in Tanzania's Rural Development. A Case Study of Sengerema District Council, Mwanza Region.

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Abstract: Sengerema district council has had a telecentre since 2001. However, the socio-economic indicators do not show that the district is better than districts without telecentres. This study intended to assess how the telecentre has benefited the users in respect of social and economic aspects. The study was conducted in Sengerema district, Mwanza region. The survey design was employed using structured and unstructured questionnaires, interviews, observation and documentary review methods of data collection. The sample size of 62 respondents included 42 males and 20 females. In general, the users believed that the centre has helped improve their community's wellbeing, however, with regard to its original objectives; the impacts do not correspond to the progress of the district. It is recommended that the telecentre should encourage people of both sexes and age to use new information and communication services, more publicity to raise people's awareness of the existence of the telecentre and the value of information, also the information provided should be in local languages in order to facilitate equitable access to information for rational decision-making.

Key Words: Telecentres, Information, Rural Development, Tanzania, Sengerema

1. Introduction

Information is a basic necessity and has a significant role to play in almost every human activity. The best possibilities can be easily obtained by those who have knowledge on how to use information effectively. Musoke (2005) asserts that access to information is an essential component of development; it is a human right and it brings about sustained development and socio-economic progress. Information is very useful for decision-making and its availability enables individuals, groups or organisations to make rational decisions and reduce their level of uncertainty (Jerome and Theresa, 2009). Making the right decisions determine the success of any initiative.

According to Mtega (2008), an information gap exists within and between nations because of unequal access to information. He argues further that telecentres were among the various strategies initiated to reduce the existing information gap. Gomez and Hunt (1999) state that, in order to lower the information gap; telecentres have been approved as the means to address this inequality. It is through this point of view that the government of Tanzania decided to establish telecentres such as Sengerema Multipurpose Community telecentre with a key objective of "demonstrating the impact and usefulness of the accelerated introduction of information and communication enabled services and programmes into rural community life in Tanzania, with special emphasis on rural development, small business, education, health and government service sectors" (Mascarenhas, Maghimbi & Mallya, 2005; Sengerema MCT Project, 2009). However, the socio-economic conditions of Sengerema district are no different from those in districts without telecentres. Also there is limited empirical data on whether deployment of telecentres increases socio – economic development among the marginalized communities in Tanzania. This

study, therefore critically examined the role of the telecentre in order to substantiate whether telecentres can be said to increase socio – economic development of marginalized communities in Sengerema District.

2. Materials and Methods

This study was conducted in Sengerema District, Mwanza region. Sengerema district is among the seven districts in Mwanza region. The land area of Sengerema district is 3,335 square kilometres and it has five divisions (Grundeken, 2012), 34 wards and 158 villages (National Bureau of Statistics, 2012). The population of Sengerema district is 663,034 according to the 2012 Tanzania national census (National Bureau of Statistics, 2012). The main economic activities prevailing in the district are agriculture, livestock keeping, timber work, fishing, mining, business and small-scale industry (Twaakyondo, Bhalalusesa and Ndalichako, 2002; Sengerema District Council, 2009; Grundeken, 2012). The main cash crops, grown in the district are cotton, bananas and horticultural crops, whereas bananas, maize, rice, cassava and paddy are grown for food. This study was conducted using a survey design to collect primary data, in which quantitative and qualitative data were collected using the following instruments, namely; questionnaire, interviews, observation and focus group discussion. Books, journals, government reports and newspapers, published, unpublished, and online sources were used to collect secondary data. The population of this study was farmers, students, businessmen and the telecentre manager. In this study, simple random and purposive sampling techniques were used. Purposive sampling was used to select two wards, which were close to the telecentre, and 63 respondents, whereas simple random sampling was used to select six neighbourhoods. The two wards selected were Ibisabageni and Nyampulukano. Six neighbourhoods were included in this

study, and were chosen from each ward. These were Ibisabageni "B", Mjini and National Housing from Ibisabageni ward and Igogo "A", Mnadani and Nyamazugo Road were selected from Nyampulukano ward. A total of 63 respondents were selected as follows: 20 farmers, 23 students, 19 businessmen and 1 telecentre manager. The Statistical Package for Social Sciences (SPSS) and content analysis were used to compute the data.

3. Literature Review

According to Bunescu (2010), and Wandila (2013), a telecentre is a publicly accessible place where people can get help to access computers and the internet that enable them to gather information, create, learn, and communicate with others. Telecentres provide access to ICTs for people who cannot afford to own them (Mat Aji, et al, 2010). Telecentres are also called tele-villages, cybercafés, electronic village halls, telecottages, phone shops, telestugens, public access points, teleboutiques, digital clubhouses, telekiosks, infocentres, community access centres, cabinas publicas, telehaus, community learning centres, community technology centres, MCTs, community multi-media centres, community media centres, multi-purpose access centres and multi-purpose community centres (Gómez & Hunt, 1999; Etta and Wamahui, 2003; Harris, 2007). Therefore, Sengerema telecentre falls within the Multipurpose Community Centre. More particularly, it has a responsibility of collecting information and communications service for rural people, isolated and underserved regions that offer services and support for a broad range of services and functions to meet the needs of the beneficiaries.

3.1 The Emergence of Telecentres

The emergence of telecentres in the world dates back to 1985 when the first telecottage (telecentre) was established, specifically in Velmdalen, Sweden (Farjallah, 2007). Their primary purpose was to overcome the remoteness of rural and isolated locations, often characterized by low purchasing power and poor quality of telecommunication infrastructure (Engvall, 1998; Mahmood, 2005; Mukerji, 2008; Ariyabandu, 2009). The emergence of the first telecentre in Sweden caused the mushrooming of telecentres in other parts of the world and, by 1987, rural telecentres started to be introduced in Western Europe, Australia and Canada. In America (Brazil) telecentres started in 1990. The Multipurpose Community Telecentre (MCT) pilot projects were adopted by the International Telecommunications Union (ITU) in East Sumatra, Indonesia in 1993 (Farjallah, 2007). Generally, telecentres were established as the main source of access to information and communications technology (ICT) services to rural, isolated and underserved communities, where personal access is impossible.

3.2 Introduction of Telecentres in Africa

Poor information amenities are among the reasons that add to African poverty. Francis (2001) and the Global Poverty Report (2000) point out that lack of access to information as well as illiteracy contributes to the poverty of Africans. Hence telecentres were introduced in Africa in the 1990s in order to improve access to information and communication services with the support of the United Nations Development Programme (UNDP), United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Institute for Communication and Development (IICD), the International Development Research Centre (IDRC), the

International Telecommunications Union (ITU), the World Bank (WB), and the Economic Commission for Africa.

Tanzania has poor information accessibility (HakiElimu et al, 2005) according to Mtega (2008). Telecentres were introduced in Tanzania to enable rural communities to have access to information, particularly in places with minimal telecommunication infrastructure. The initiative started way back in 1999 with the setting up of the African model in Sengerema and it took off in 2001 as one of the 5 pilot telecentre projects in Africa (Pomodoro, 2004). Since then other telecentres have been established at Lugoba, Mpwapwa, Ngara, Dakawa, Kilosa, Mtwara and Kasulu, to mention a few.

Sengerema telecentre is one the Multipurpose Community Telecentres (MCT) introduced in Africa, being preceded by Nakaseke in Uganda, which was the first to be established in 1996, according to Farjallah (2007). Three different groups of organizations cooperated in the process of introducing Sengerema MCT, which were international, national and local community organizations. The international organizations were IDRC-CANADA, UNESCO and ITU. The national organizations were the Tanzania Communications Regulatory Authority (TCRA), Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA), the Tanzania Telecommunications Company Limited (TTCL), the Open University of Tanzania (OUT), Institute of Adult Education and the Commission for Science and Technology (COSTECH) and the Local Community organization were Sengerema District Council, Sengerema Folk Development College, Sengerema Teachers Centre, government and private secondary schools in Sengerema and other private individuals (Mruma, 2003; Sengerema MCT Project, 2009).

Sengerema MCT is under the Ministry of Communications, Science and Technology and is aimed at improving information and communication services in rural areas in Tanzania (Twaakyondo, Bhalalusesa and Ndalichako, 2002)

3.3 The Role of Telecentres

Telecentres play a great role in individual, group, organization and even a nation at large, through access to information and other related services once used effectively and recognizing their potential. Various studies have proved their roles. Macome and Cumbana (2000), in their study of Manhiça and Namaacha telecentres at Maputo in Mozambique reveal that telecentres have assisted users to save money because trips to Mputo to seek telecentres services were cut down. Moreover telecentres help users to be well informed on various issues prevailing in and outside their society, through various informational services provided by telecentres, such as email, telephone, wall newspapers, internet and library. Norton et al (2000) show that telecentres have caused the economy to grow through enabling farmers to obtain the trends of local crops and market rates. Tokali and Wanas (2007) opine that telecentres enable users to increases their productivity. For instance, farmers that used Technology Access Community Centers were able to increase their agricultural productivity through investing in better methods of production and fertilizers. Generally the reviewed literature has shown several roles of telecentres in the areas where they have been established and specifically on individuals. However, no literature indicates how a specific area was in terms of development before the establishment of the telecentre, and the extent to which that area has achieved significant physical progress after the establishment of the telecentre. Moreover, for there to be a substantial role of telecentres on users, adequately skilled telecentre personnel, and adequate and quality telecentre services

should be in place. No study has critically described what skills or qualifications a telecentre staff should have, or what quantity and quality of telecentre services should be considered when establishing a telecentre to ensure that the services provided to users would have an impact on their socio-economic development. Hence, conducting a study on that would be worth doing.

FINDINGS AND DISCUSSION

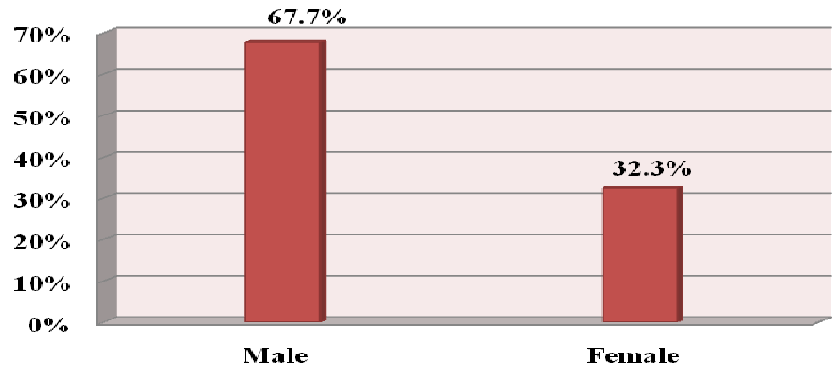
4. Respondents' Socio-Economic Characteristics

Data on the gender, age, occupation and level of education of respondents are presented.

4.1 Distribution of Respondents by Gender

The data show that 42 (67.7%) respondents were male, whereas 20 (32.3%) were female. The findings are shown in Figure 1.

Figure 1: Distribution of Respondents by Gender (N=62)



Source: Field data, 2010

Societal, cultural and economic factors might have limited women's participation in the study and hence users of the telecentre. This might be because of the family care-giving role of females who have less time to use the telecentre than males. In most families, the mother is the one who takes on the caretaker role rather than a father. This is the natural tendency of the majority of women to be the primary care givers, whether it is for children or the elderly, or to be taking care of the household and the needs of their husbands. In addition, women usually tend to be less educated than men and have less access to financial resources. Moreover, women's attitude to new information and communication services is less positive than to men's. These results are similar to those of Ojo (2005), who found that 80% of users of telecentres were male, specifically not older than 35 years, and those of Mercer (2005), who found that the majority of young and educated males aged between15-35 dominated the use of internet cafes and telecentres. In addition, Mascarenhas, Maghimbi and Mallya (2005) found 83% of telecentre users were male and only 17% were female in the study area. Hence, there is no significant change in the aspect of gender concerning the use of Sengerema telecentre. Generally, this survey indicates that most telecentre users are male.

4.2 Distribution of Respondents by Age

The age range of respondents shows that 43.5% were under 25 years old, 19.4% were in the age range of 26-35, 16.1% in the age range of 36-45, 8.1% in the age range of 46-55 and 12.9% over 55 years old. The age range of respondents was 14 to 74 years, with a mean of 32. The findings are shown in Table 1.

Table 1: Distribution of Respondents by Age Category

Total Sample N=62	Category	Frequency	Percent (%)
	Below 25	27	43.5
	26-35	12	19.4
	36-45	10	16.1
	46-55	5	8.1
	Above 55	8	12.9
	Total	**62**	**100**

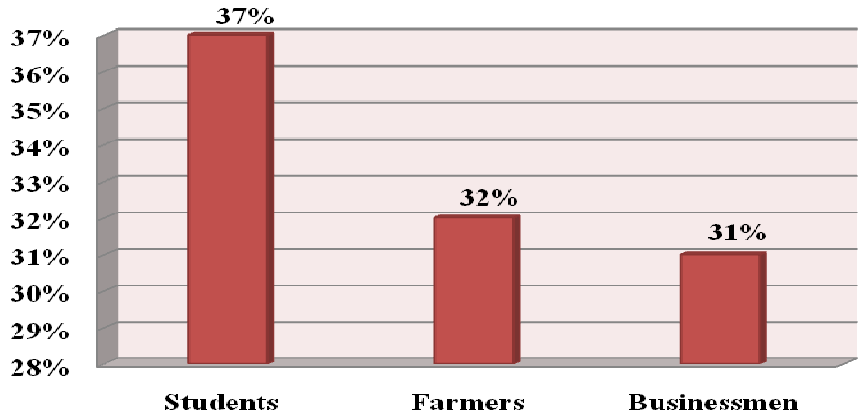
Source: Field data, 2010

As shown in Table 1, the majority of the respondents were under 25 years old. This indicates that the use of telecentres is dominated by the younger generation. It might also be explained by the fact that the younger generation is habitually more attracted to using technologies that are new to them. They might also be motivated by curiosity. This is supported by Gomez and Camacho (2009), who found that most users of telecentres are young people between 15-35 years. In this study there were fewer older people, probably because the nature of their responsibility, which is being head of their families, needed them to work hard to earn a living, hence limiting them from using telecentres.

4.3 Distribution of Respondents by Occupation

With regard to respondents' occupation, 23 (37.1%) were students, 20 (32.3%) were farmers and 19 (30.6%) respondents were businessmen. Figure 2 presents the findings.

Figure 2: Distribution of Respondents by Occupation (N=62)



Source: Field Data, 2010

The findings in Figure 2 show that students were the majority followed by farmers and businessmen. Generally, the data implies that the telecentre has attracted a wide range of users in the nine years of its existence and has proved that people of different livelihoods will use telecentres and other ICT related services if they are available.

4.4 Distribution of Respondents by Level of Education

The respondents' level of education indicates that 38.7% of respondents have received Primary Education, 48.4% Secondary Education, and 1.6% University Education whereas 8.1% possessed Vocational Training Certificates and 3.2% possessed Adult Education Certificates. The results are shown in Table 2.

Table 2: Distribution of Respondents by Level of Education

Total Sample N=62	Category	Frequency	Percent (%)
	Primary	24	38.7
	Adult Education	2	3.2
	Vocational	5	8.1
	Secondary	30	48.4
	University	1	1.6
	Total	**62**	**100**

Source: Field Data, 2010

As Table 2 indicates, the respondents' level of education varied. The study was dominated by lower secondary followed by the primary level of education. This might have been caused by the fact that the use of new information and communication services regularly requires exposure to the technology itself and literacy, often English literacy. The other probable reason might be the complex nature of new information and communication services, such as the text-based and multimedia capability of computers, for instance, which might intimidate those users with little formal education and prevent them from using those services. This study is supported by Parkinson (2005), who points out that the use of ICTs like computer-related services is dominated by those with higher levels of education (secondary or above) and these people frequently have had some prior exposure to computers either through school, or work, or members of the family and friends have introduced ICT to them. The study of the four Internet cafes in Sengerema and Dar es Salaam by Mercer (2005) reveals that the majority of users attended school beyond primary level, as 51% of users in Dar es Salaam and 28% in Sengerema had all completed Form Four. Another study by Rohozinska (2001) indicates that 98% of internet users in Ethiopia had a university degree. In general, the results imply that the use of telecentres is dominated by users with higher levels of education, since they have been exposed

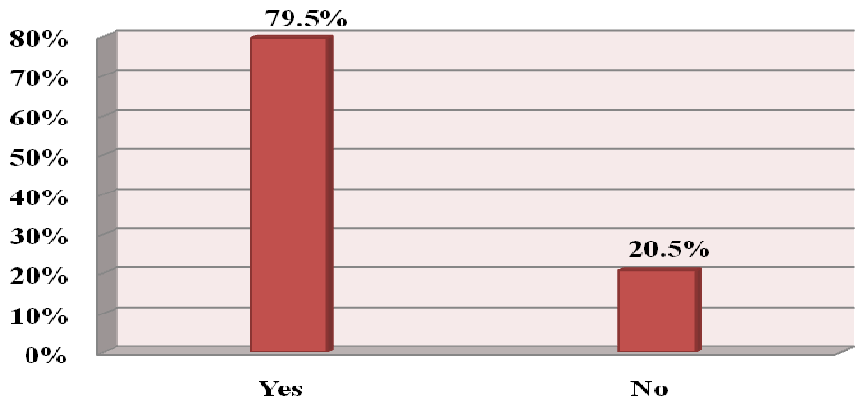
to the new information and communication services either at school, or work, or they were introduced to it by their friends or members of the family and are often English literate.

5. Economic Role of Telecentres

5.1 The Role of the Telecentre in Improving Agriculture and Business Activities.

Agriculture is the main economic activity of people in rural regions. Apart from agriculture, rural people engage in small-scale business activities to earn their living. Developing agriculture and business activities can contribute to improving the living conditions in rural areas. Easy access to information and communication services has given agriculture and businesses significantly improved access to markets for agricultural produce and other business products. The telecentre project assists farmers and business people by providing them with modern technology, as new markets are established for electronic selling of products.

Figure 3: The Role of the Telecentre in Improving Agriculture and Business Activities (N=39)



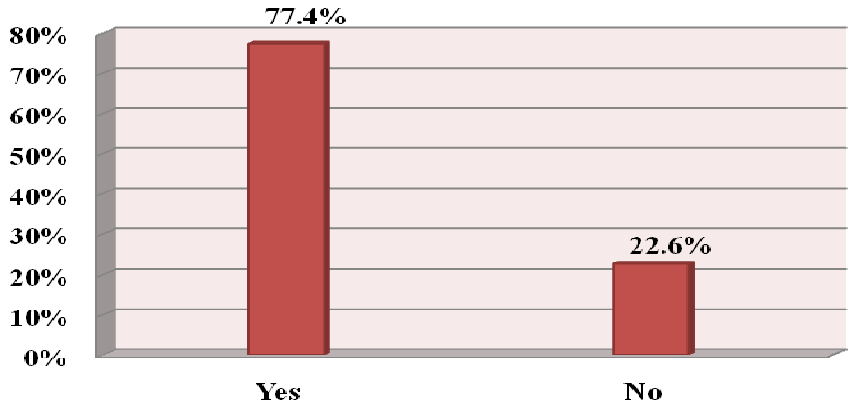
Source: Field Data, 2010

The data in Figure 3 above indicate that 31 (79.5%) respondents consider that the telecentre has influenced their sales. This was made possible through broadcasts aired by Sengerema community radio daily through the programme called “Markets and Prices”, in which market availability and prices of products were made known to farmers and businessmen. Also farmers and businessmen reported that they were able to advertise their products or businesses through community radio and communicate with their customers using a telephone available at the telecentre or to access market information on the internet at the telecentre thereby increasing the number of customers.

5.2 The Role of the Telecentre in Saving Money

The telecentre enabled its users to save money by using Sengerema MCT to seek information and to communicate. Figure 4 presents the findings.

Figure 4: The Role of the Telecentre in Saving Money (N=62)



Source: Field Data 201

The results in Figure 4 show that 48 (77.4%) respondents indicated that the establishment of the telecentre in their area has contributed to their savings. The previous study by Mascarenhas, Maghimbi and Mallya (2005) in the study area found that 50% of respondents reported improved savings due to the telecentre service. This implies that there has been an increase in the number of telecentre users in the area who appreciate that the telecentre assists them in saving money. Only 14 (22.6%) respondents in this study denied the connection between the telecentre and saving money. One respondent said that "once we had to go from Sengerema to Mwanza city to get a photocopy, internet services and place an advert for our agriculture and other business products". The users believed that cutting down on trips to the Mwanza city after the establishment of the telecentre saved money since the trip cost them TSH 10,000. Hence, the presence of the telecentre in Sengerema enabled users to save money, although this was only possible for those who lived closer to the telecentre. Users also said that they enjoyed saving money by having access to information resources that they would otherwise have had to buy.

5.3 Social Roles of Telecentres

5.3.1 The Role of the Telecentre on Communication

The telecentre enabled communication to be maintained with families, friends and customers through the internet, e-mail, radio, telephone and fax. The findings are shown in Table 3.

Table 3: The Role of the Telecentre on Communication

Category	Frequency	Percent (%)
Access to radio	52	83.9
Access to email	24	38.7
Access to internet	18	29
Telephone	10	16.1
Access to fax	4	6.5

Source: Field Data 2010 (**Note**: Multiple Responses)

Table 3 indicates that 83.9% of respondents indicated that the telecentre has helped them to communicate with their families, friends and customers through the radio, followed by 38.7% percent of respondents who communicated via email. Twenty nine percent of respondents communicated via the internet, 16.1% via telephone and 6.5% of respondents communicated via fax. Through the community radio, for example, respondents in the focus group discussion reported being able to tell others in the communities about deaths, weddings, missing children and livestock, sickness, celebration arrangements, greetings, business advertisements and events taking place in the community. In addition, respondents reported that through the internet and email, telephone and fax they were able to communicate easily with relatives, friends and customers.

5.3.2 The Role of the Telecentre in Improving Access to Health Information

The telecentre enabled users to be better informed on various diseases prevailing in their society. Respondents were asked about the type of information they got from the telecentre. Ninety five percent of respondents indicated that the telecentre enabled them to be better informed on HIV/AIDS and 77% on malaria. Fifty six percent of respondents were informed on child vaccination, 41% on intestinal worms, 13.1% on cholera and 6.6% on sexually transmitted

diseases, 5% on eye diseases, 3.3% on environmental cleanliness, and 1.6% of respondents received information on Tuberculosis, Diabetes, Leprosy, Typhoid, Cancer, Early Pregnancy and Family Planning. Table 4 gives the findings.

Table 4: The Role of the Telecentre in Improving Health Information

Category	Frequency	Percent (%)
HIV/AIDS	58	95.1
Malaria	47	77
Child Vaccination	34	55.7
Intestinal worms	25	41
Cholera	8	13.1
STDs	4	6.6
Eye diseases	3	4.9
Environmental Cleanliness	2	3.3
Tuberculosis	1	1.6
Diabetes	1	1.6
Leprosy	1	1.6
Typhoid	1	1.6
Cancer	1	1.6
Early Pregnancy	1	1.6
Family Planning	1	1.6

Source: Field data 2010 (**Note**: Multiple Responses)

Table 4 above indicates that the majority of respondents noted HIV/AIDS, followed by Malaria, child vaccination and intestinal worms. In the interview, respondents noted that through the community radio they received information on how to protect themselves from HIV/AIDS and on using mosquito nets to prevent them and their families from getting malaria, and it enabled mothers to know when to take children for vaccination. Specialists from Sengerema District Health Department used to come and raise people's awareness via the community radio concerning various diseases such as HIV/AIDS and malaria and respondents could ask questions

for clarification. Other sources the respondents used to access health information included the internet and booklets provided by the telecentre.

5.3.3 The Role of the Telecentre on Provision of Information and Communication Sources

The telecentre enabled users to get several sources, which can be used to access different types of information and easily communicate with relevant organizations or individuals. In this study, 63.9% of respondents specified radio as the main source of information they were able to access at the telecentre. Informational websites were indicated by 45.9% of respondents. Twenty five percent of respondents pointed to booklets while 9.6% indicated books. Table 5 presents the findings.

Table 5: The Role of the Telecentre on Provision of Information and Communication Sources

Category	Frequency	Percent (%)
Radio	39	63.9
Informational Websites	28	45.9
Booklets	15	24.6
Books	7	9.6

Source: Field Data, 2010 (**Note**: Multiple Responses)

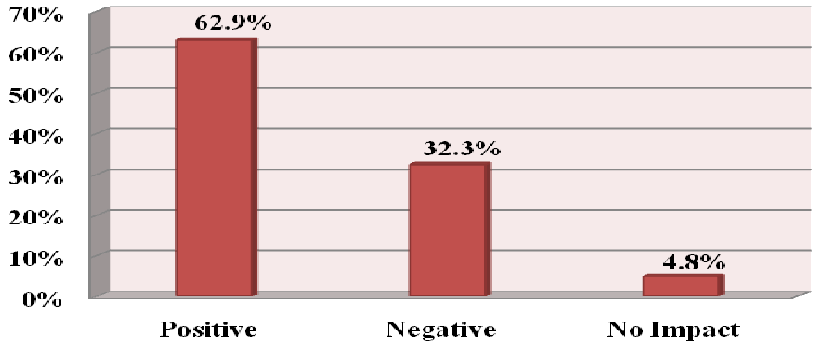
The data in Table 5 above shows that the most significant source of information accessed by many respondents at the telecentre was the radio, followed by information websites, booklets and books. In the interviews, respondents reported that through Sengerema community radio they got information on human rights, such as women's rights, on decision making, use of family resources, participation in development activities and information on voting activities. Search

engines such as Yahoo and Google, booklets and books enabled users to get a wide range of information on health, agriculture, educational materials and markets.

5.3.4 The Role of the Telecentre on Culture

With regard to culture, humanity's life has been penetrated by new technologies that depress traditional values in favour of modernism in terms of culture. Despite the fact that rural regions are safer in this regard than urban places, this seems to be changing through telecentres. Thirty-nine (62.9%) respondents indicated that the telecentre has a positive impact on traditional culture, 20 (32.3%) indicated negative and 3 (4.8%) indicated no impact. The findings are shown in Figure 5.

Figure 5: The Role of the Telecentre on Culture (N=62)



Source: Field Data, 2010.

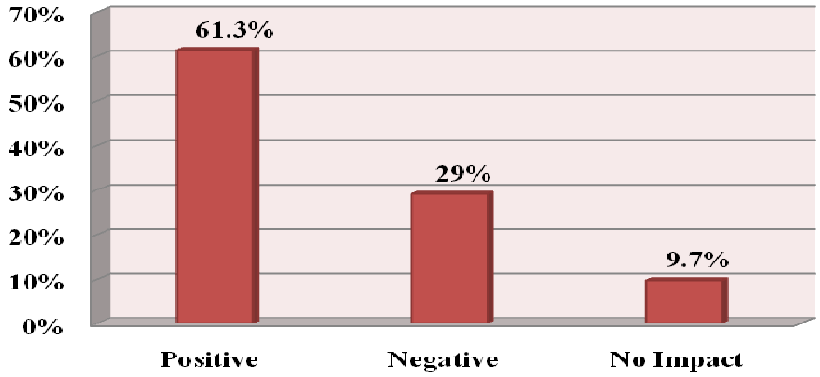
The data in Figure 5 above indicates that the majority of respondents noted that the telecentre has a positive impact on traditional culture, followed by negative and no impact. In the interviews, respondents reported that before the establishment of the telecentre in the district it was difficult

to share information among people when an event occurred. For instance, if a person died, a message was spread to other members of the community using word of mouth, beating a drum or blowing an animal's horn. However, through the community radio and telephone services, messages can be spread to many people in a very short space of time. However, other respondents observed that the telecentre has a negative impact on their traditional culture. For instance through exposure to sexually explicit material on the internet, such as naked people having sex and violent sexual pictures has influenced rape incidents in the community and people wearing clothes that show them half-naked. A few respondents pointed out that the telecentre has no impact on their traditional culture. During the interviews, some respondents argued that changes in any traditional culture are determined by time and that even without the existence of the telecentre in the area their traditional culture would have changed. For example, instead of using word-of-mouth, drums or animal horns to spread information to the people, mobile phones have been introduced in the area, not by the telecentre but by the phone companies.

5.3.5 The Role of the Telecentre on Morals

Telecentres have an influence on the moral issues of communities. Thirty-eight (61.3%) respondents noted that the telecentre has had a positive impact on their morals, 18 (29%) indicated a negative influence and 6 (9.7%) no impact. Figure 6 presents the findings.

Figure 6: The Role of the Telecentre on Morals (N=62)



Source: Field Data, 2010.

As indicated in Figure 6 above, the majority of respondents reported that the telecentre has had a positive impact on their moral wellbeing. Respondents noted that some of the telecentre programmes enabled them to know the difference between what is right, wrong, and choosing to do the right thing. For instance, programmes such as "Maisha Yetu" aired by community radio disseminated information on moral aspects, for instance on how to behave well in their community. Respondents who pointed out the negative relationship between the telecentre and morals said that through the internet, some users looked at pornography, which is immoral. They further noted that this could encourage users to engage in sexual relationships hence transmitting HIV/AIDS and sexually transmitted diseases. Only a few respondents pointed out that the existence of the telecentre has no impact on their moral wellbeing, arguing that good behaviour is determined by improving moral relations, without waiting to use the telecentre.

Conclusion

Despite the existence of the telecentre, the socio-economic condition of Sengerema district is similar to that of other districts in the country which do not have telecentres. In this study the people believed that the centre had improved their wellbeing in general. However, with regard to its original objectives, the achieved benefits do not correspond to the progress of the district.

The telecentre should encourage people of both sexes and age to use new information and communication services, more publicity to raise people's awareness of the existence of the telecentre and the value of information, also the information provided should be in local languages in order to facilitate equitable access to information for rational decision-making.

6. Recommendations

Based on the findings of this study, the following recommendations are made:

(1) Many studies show that men use telecentres and other ICTs more than women do. Since development is the joint effort of men and women, both sexes should be encouraged to fully utilize telecentres and the available information and communication services in order to realize developmental objectives.

(2) Studies have pointed out that young people dominate telecentre use. There is a need for more conscientization programmes to be conducted in places where telecentres have been established, in order to influence all groups of people to use them, irrespective of their age, so that all of them could benefit from the information and communication services available at the centre and be able to make rational decisions necessary for development of their areas and the country at large.

(3) There is still little knowledge of the existence of telecentres and their significance for their users in the country. There is a need for more publicity to raise people's awareness of the existence of these centres in places where they have been introduced and of the value of information.

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