Contributions Of Information And Communication Technologies To Enterprises Of Rural Dwellers

Yekinni, Oyedeji Taofeeq

Department of Agricultural Extension and Rural Development,
University of Ibadan, Ibadan, Nigeria
E-mail: taofeeq_yekinni@yahoo.com, taofeeqyekinni@gmail.com

ABSTRACT

Information and Communication Technologies are offering new ways for communicating and exchanging information and knowledge. The study pursued the potentials of use of ICTs to enhance rural people's livelihood in terms of access to relevant information for their occupation. The study was carried out in Oyo state, using multistage random sampling technique to select 120 respondents. Data collected was analysed using frequencies and percentages to describe the findings while multinomial logit model and PPMC were used to test for relationship between the variables in the study's hypotheses. The study found that most (63.3%) of the respondents were male, 72.5% were married and with mean of 6.84 years of formal education. They were mostly crop farmers and the crops cultivated by most of them were cassava, maize, cowpea, cashew and vegetable, and they have mean of 16.58 years of experience. They mostly required price and sales information for their enterprises. The major sources of information to the respondents were fellow professionals and family and friends while the main ICT sources were radio, GSM and television. The GSM features appreciably used by the respondents were voice call, SMS and voice SMS. The study found that 55.0% of the respondents were in the low level category of ICT users, 51.7% of them had benefited appreciably from the use of the facilities. The mostly realised constraints to use of the ICTs were unreliable power supply, missed information, technical knowledge and network fluctuation. Multinomial logit result found that education (β=0.246; p=0.000) and number of dependants (β=-0.412; p=0.006) significantly influenced the respondents' use of ICT tools. PPMC analysis revealed that use of ICTs is significantly increased by the benefits realised (r=0.638; p=0.000) and significantly (r=-0.258; p=0.005) reduced by constraints to ICT use. The study provided empirical evidence that access to ICTs can significantly improve the enterprises of rural dwellers and hence a poverty alleviation strategy in rural areas.

Keywords: ICT, utilisation, rural enterprise, poverty

INTRODUCTION

Background to the study

The contemporary society is characterised by the importance of information components in all facets of life; this is conceptualised as the information age. This period is typified by the development and proliferation of electronically communicated information, which has accelerated economic and social change across all areas of human activity worldwide, and it continues to do so at a rapid pace. While the use of information and communication technologies (ICTs) remains concentrated largely in the developed world, ICT diffusion is beginning to reach developing countries, including poor rural areas, bringing with it high hopes of positive development outcomes. Despite the fact that technological innovations, such as cellular telephones and wireless broadband access, are playing an important role in building ICT levels globally, strong inequality still remains.

ICTs are unique by their nature by having an impact beyond the individual user's welfare. ICT infrastructure offers economies of scale that stimulate network building and consequent spill over benefits (Maximo and von Braun, 2006). ICTs enable interactive communication unhindered by distance, volume, medium, or time. They promote greater inclusion of individuals within networks and increase the diversity of participants by overcoming the barriers of physical distance and social standing; which are

issues of critical deprivation to most rural entrepreneurs. The immediacy and reach of ICTs also promote faster, more efficient, and ultimately better decision-making across all fields of endeavour.

Some sceptics, however, hold much more different views of the benefits of ICTs for development. They argue that access to ICTs largely depends on education, income, and wealth and that the so-called digital divide is only a part of a much broader development divide. Limited education, inappropriate language skills, or lack of resources could prevent disadvantaged segments of the population from accessing ICTs, ultimately exacerbating information gaps and increasing income inequality between and within countries. The income gap could be further widened if ICT use raises the demand for skilled labour and, by its introduction into manufacturing and service industries reduces the demand for unskilled labour, at least in the short term. It is often argued that developing countries have other, more pressing investment priorities, such as food, safe water, education, and public health, and that devoting limited resources to ICTs must be justified on the basis of its opportunity costs relative to other development agendas. The foregoing depicts variety of views about ICTs and reveals that their role in development is unclear, especially without convincing evidence of their impact, and little research has been conducted on the direct and indirect links between ICTs and poverty reduction.

Statement of problem

The rural poor constitute the engines of agricultural production in developing countries while agricultural production and post-harvest activities account for the primary livelihood strategies available to them. Hence, any effort made to address the problems of livelihood of the rural poor will equally have significant impacts on agricultural production at household, regional and national levels. The development stakeholders therefore have the responsibility to make the farmers among other stakeholders withstand the challenges of globalisation. There is growing recognition that farmers and members of rural communities have needs for information and appropriate learning methods that are not being met (Greenridge, 2003 and Lightfoot, 2003). The emerging issue is how Information and Communication Technology (ICT) can be integrated into local knowledge and information networks to address locally identified knowledge gaps.

A major indicator of infrastructural requirement for ICT use is Teledensity. It is a measure of the penetration of telephone lines within a territory. Nigeria's teledensity grew from near zero at the turn of the millennium to about 8% in just four years; whereas by 2009, it has grown to over 53%. This shows a geometric increase in the availability of the facility to the extent that Nigeria was declared as the largest growth market for telecommunication in Africa and the Middle East (NCC, 2005). There have been increases in access to various ICT tools such as Global System for Mobile Communications (GSM), television (TV), and radios, internet and newspapers even in rural areas. These facilities can be used by people to access information on prices, markets, technology, and other enterprises. Community-based telecentres are being established, with the goal to empower rural communities and facilitate socioeconomic development through communal access to the facilities. It would therefore be relevant to determine the extent to which the available ICT tools contribute to development of rural enterprises and hence the welfare of the rural people.

Therefore, this study is proposed to address the following research questions:
1. What are the enterprise characteristics of the respondents?
2. Which ICT tools are available to the entrepreneurs in the study area?
3. What are the benefits to the respondents' enterprises from the use of ICT facilities?
4. What are the constraints to the use of ICTs in the study area?

Objectives of the study

The general objective of the study is to ascertain the contribution of ICTs to the development rural enterprises in the study area. The specific objectives are to:
1. ascertain the enterprises characteristics of the respondents
2. identify the ICTs tools are available to the entrepreneurs in the study area
3. document the benefits to the respondents' enterprises from their use of ICTs facilities
4. determine the constraints to the use of ICTs in the study area

Hypotheses of the study

The hypotheses of the study, stated in null form, are as follows:
1. There is no significant relationship between socioeconomic characteristics of the

respondents and extent of use of ICTs in their enterprises.

2. There is no significant relationship between constraints realised, benefits derived and extent of use of ICTs.

Justification of study

The notion of ICTs contribution to development of rural enterprises highlights the capacities of new technologies to develop the rural communities. Thus, use of the ICTs facilities may ultimately lead to real rural development in Nigeria because of its capability to harness all the required information needed by the people to withstand the trends in the contemporary world. This strategy is proposing a way of effective use of the ICT facilities in the country to fulfil the critical needs of the people. This study will ultimately provide milestone indicators of how to integrate rural development efforts into the country's IT policy. This development will assist in achieving the elusive sustainable food security in Nigeria as well as facilitate the nation's economic diversification efforts into the agricultural sector. The strategy will equally facilitate extension delivery systems by making it ultimately more effective and less expensive in comparison to the traditional methods that were hitherto in use. Empirical evidence about the relevance of the facilities to rural enterprises will assist the government and private agencies with concerns on agricultural and rural development.

Relationship between ICT and economic growth

In assessing the potential for ICTs to promote economic growth that benefits the poor, two central questions remain to be answered: First, to what extent has a causal relationship between ICTs and economic growth been established, or are there other factors involved? Second, is the resulting growth pro-poor, and, if not, what conditions could make it so? According to Maximo and von Braun (2006), estimates for 113 countries for over a 20-year period show a positive correlation between telecommunications infrastructure and income, as well as between telecommunications infrastructure and gross domestic product (GDP). The estimates suggest that a 1.0% increase in the telecommunications penetration rate might be expected to lead to a 0.03% increase in GDP. At the same time, models for different country groups reveal that telecommunications infrastructure has a nonlinear effect on economic output, particularly for lower and higher middle-income countries. These results imply that telecommunications networks need to reach a critical mass to have a discernible impact on economic output. In particular, growth effects were found to be strongest in areas with telecommunications penetration rates of between 5% and 15%.

Adaptation of ICTs to low income earners and SMEs

Collectively, small and medium-sized enterprises (SMEs) are perceived as the engine of growth in developing countries, but they face a formidable task in terms of surviving and competing in a global market. As one of the driving forces of globalisation, ICTs may deliver unprecedented opportunities. SME case studies provide substantial evidence of increased ICT adoption in low-income countries and positive ICT effects on SME performance. Wide use of the available technologies shows that ICT adoption can be a key element in remaining competitive. Nevertheless, the impact on firm performance in most cases is small. Low penetration rates in developing countries, below the reported minimum threshold level, may be responsible. In addition, and perhaps more important, the lack of complementary infrastructure may reduce the opportunities for firms adopting ICTs to perform better. The concentration on quantitative performance indicators may also have omitted notable improvement in the qualitative performance of the firms.

More data need to be collected over longer time periods. Such data, especially those collected from the same subjects, should focus on SMEs and on eliminating any doubt about a causal relationship between the diffusion of ICTs and economic and social benefits in developing countries and regions. Such results may confirm a positive correlation, in some cases quite strongly, between ICT access and improved SME performance.

Surmounting constraints to ICT use

The reduction of the information gap at a low cost is of central importance for the poor. Even though access is still very restricted in most rural areas, it is fair to say that ICTs have an important positive impact on rural households. The welfare effect of telephone use in rural households is verified by users' perceptions of the benefits, the high demand for service, the substantial consumer surplus associated with telephone use, households' willingness to pay and results from some econometric analysis. It is possible to increase the positive impact by making

ICTs more accessible in rural areas, adapting new technologies to rural settings and using old technologies in innovative ways, such as providing information services by telephone.

However, in both SMEs and households some policy problems remain. First, most case studies reveal that major regulatory impediments lead to lack of private-sector participation in telecommunications and consequently to insufficient competition. As a result, access costs are too high, interconnection between networks is problematic, and infrastructure cannot be shared among operators. Second, a number of potential barriers to the effectiveness of ICTs remain. Apart from issues of access and price, barriers to ICT effectiveness fall into three principal categories:

i) barriers involving skill levels, such as in accessing Internet information;
ii) barriers involving ICT use for development-related purposes; and
iii) barriers related to content relevance.

These factors have the potential to influence the rate of adoption and the degree to which available Internet information reaches individuals in the community. Given these barriers, expanding ICTs in rural areas may require complementary measures, such as computer and Internet skills training, web pages designed to direct users to locally relevant content, or access that targets specific groups, such as youth, who may experience fewer sociocultural barriers to ICT use. In many low-income countries, access to telephones is the basis of pro-poor ICT growth because specialised skills are not needed and because telephone access forms a platform for more advanced ICT adoption.

With respect to cost barriers, it will be important to learn from existing models. Public Internet access, for example, provides efficient, low-cost access to multiple users, at both the SME and household levels. This business model could be modified to suit a dual broadband strategy, promoting both the deployment of wireless broadband networks and the adoption of voice telephony applications targeted to low-income users.

METHODOLOGY
Study area
The study was carried out in Oyo State. It lies between Latitudes 7°23′47″ and 8°00′0″N; Longitudes 3°55′0″E and 4°00′0″ and covers a total of 27,249 square kilometres of landmass. It has such towns as Ibadan, Ogbomoso, Oyo, Iseyin, Saki Igboho, Kisi, Igbo-Ora, Okeho, Lalupon and Ileto. It consists of thirty-three local government areas. Agriculture is the main occupation of the people in the state. The climate favours the cultivation of crops like maize, yam, cassava, cowpea, rice, plantains, cocoa, palm produce, cashew among others.

Sampling procedure and sample size
The population of the study consist of all rural households in the study area. Multistage sampling procedure was used to select the respondents of the study. The first stage involved a stratification of local government areas in the state on rural-urban basis; this gave 20 rural and 13 urban local government areas. The second stage involved a selection of 20% of the rural local government areas using simple random sampling technique, which gave four local government areas. The third stage involved a random selection of two communities from each of the four selected local government areas. Fourth stage involved a systematic selection of 15 households from each of the selected eight communities. The study sampled an individual from each of the selected households, which gave a sample size of 120 respondents.

Instrument and method of data collection
The research instrument contains question items that were used to solicit information along the objectives of the study. The respondents were asked to indicate the ICT tools available to them and the extent to which they used the available ICT tools. The index created from extent of use of ICTs was used to categorise the respondents into low and high levels based on 'above and below the mean' criterion.

Structured questionnaire was used to collect information from literate farmers but was administered as interview schedule to illiterate farmers, so as to circumvent the barrier of illiteracy.

Method of data analysis
Descriptive statistic such as frequencies, percentage and mean were used to describe some of the variables. Inferential statistical tools such as PPMC and Binomial logit regression model were used to test for relationship between the variables in the hypotheses of the study.

RESULT DISCUSSION
Personal characteristics of the respondents
The result of the analysis on the respondents' socioeconomic characteristics, as given in Table 1 revealed that most (63.3%) of

them were male while others were female. This implies that the rural enterprises are dominated by male in the study area. The result also shows that that while 72.5% of the respondents were married, 12.5% of them were single. Distribution of the respondents by age reveals that most (41.7%) of them fell between the ages of 36 and 51 years, while 32.5% were between 52 and 68 years. The mean age being 44.9 years showed that the respondents are still fairly young in the rural area.

Table 1: Distribution of respondents by socioeconomic characteristics

Characteristics	Freq	Percent
Sex		
Male	76	63.3
Female	44	36.7
Marital status		
Separated	14	11.7
Widow	4	3.3
Married	87	72.5
Single	15	12.5
Age (Years)	Mean = 44.90	
20 - 35	31	25.8
36 - 51	50	41.7
52 – 68	39	32.5
Years of formal education	Mean = 6.85	
None	33	27.5
Primary	39	32.5
Secondary	24	20.0
Tertiary	24	20.0
Family size (Mean = 7.33)		
1-5	36	30.0
6-10	64	53.3
More than 10	20	16.7
Income/month (N)	Mean = 25,333.33	
1500 – 19000	44	36.7
19001 - 36500	56	46.6
36501 - 54000	16	13.3
71500 – 100000	4	3.3
Total	120	100.0

Distribution of respondents' education revealed that most (32.5%) of them had primary education, 20.0% had tertiary education while 27.5% did not have any formal education. The mean years of formal education (6.85 years) showed that the respondents merely had primary education in the study area. The study also showed that more than half (53.3%) of the respondents had between 6 and 10 persons within

their families while 30.0% had between 1 and 5 persons as their family sizes; an average family size of 7.33 persons depicted a fairly large family size in the study area. The results also show that about half (46.6%) of the respondents' income fell between N19,009 and N36,500 per month, while 36.7% had between N1500 and N19000 as their monthly income. With the mean income at N25,333.33/month, translating to about $5 per day, the income is fairly low among the respondents in the study area.

Enterprise characteristics

The distribution of the respondents' enterprise characteristics, as given in Table 2 showed that 40.8% had farming as their primary occupation while 22.5% were traders/artisans. It further shows that most of the respondents (59.2%) had farming as their secondary occupation. This implies that farming is the main activity in which most of the respondents in the study area are involved. Distribution of the respondents by crops cultivated showed that all of them cultivated cassava and maize, 90.8% cultivated cowpea while 53.2% cultivated varieties of vegetable crops. This implies that cassava and maize among others are the mostly cultivated crops in the study area.

Regarding information sought in their enterprises, the results show that 71.7% required price information while 50.8% required sales information. This means that the mostly sought information by the rural entrepreneurs is the price information. This need, according to Okunmadewa (1998), is critical because farmers are mostly not well remunerated in their enterprise activities as their share of retail prices is as low as 40% for most food crops.

The results also show that 56.7% of the respondents had between 2 and 19 years of experience in their rural enterprises while 40.0% had between 20 and 37 years of experience. With average years of experience at 16.58 years, it shows that the rural entrepreneurs are well experienced in their activities.

Table 2: Distribution of respondents by enterprises characteristics

Enterprises characteristics	Freq.	Percent
Primary occupation		
Trading/Artisan	27	22.5
Farming	49	40.8
Civil servant	25	20.8
Teaching	19	15.8

Secondary occupation		
Farming	71	59.2
Trading/Artisan	30	25.0
Masonry	16	13.3
Crops cultivated*		
Cassava	109	100.0
Maize	109	100.0
Cowpea	99	90.8
Cocoa	91	83.5
Cashew	99	90.8
Yam	37	33.9
Vegetable	58	53.2
Nature of information required*		
Sales information	61	50.8
Market information	39	32.5
Price information	86	71.7
Year of experiences		
2 – 19	68	56.7
20 – 37	48	40.0
38 – 50	4	3.3
Total	**120**	**100.0**

* Multiple responses

Sources of information on enterprises

The study pursued and obtained data on sources of information for enterprise activities in the study area. Distribution of respondents, in Table 3 shows that information for their enterprises were obtained from social sources as well as through the ICT tools.

The results revealed that fellow professionals (weighted score = 192.4) are the most prominent sources of enterprise information to most rural entrepreneurs in the study area, then family and friends (179.1) and extension agents (90.1). This implies that the most useful social linkage to the entrepreneurs is fellow professionals, who are equally confronted by the same need, which emphasises the importance of the social capital resource in the study area.

The ICT tools, among others sources, from which respondents accessed enterprise information are radio (129.9), GSM (129.2), television (110.9) and newspaper (69.2). This showed that GSM, apart from radio is well used to fulfil information needs by most of the entrepreneurs. This prompted the need to assess the extent of use of GSM features by the respondents. This finding shows that voice call (165.8) was mostly used, then short message services (SMS) (99.9), voice SMS (65.8), multimedia messaging service (MMS) (56.9) and general packet radio service (GPRS) (41.7) in that order. This revealed that voice call is the mostly used GSM feature by the respondents in the study area.

Distribution of the level of use of ICTs in Table 4 shows that 55.0% of the respondents do not use the ICTs substantially on the basis of their enterprise concerns.

Benefits derived from use of ICTs

The study found out the areas of benefits to the respondents' enterprises from their use of ICTs. Findings in Table 5 show that their ability to communicate easily to customers is the mostly (153.8) realised benefits by the respondents. Thereafter, relevant information from media (113.4), ideas on enhancement of quality of products (110.8), increased profits (105.1), risk management (98.4) and enhanced patronage due to adverts (96.6) are the other benefits realised by the respondents. This revealed that the mostly realised benefits is the one conferred by the use of GSM, while other emanated from the use of mass media tools such as radio and television. This finding underscores the importance of GSM as an important tool to the entrepreneurs in the study area. According to Gelb *et al* (2008), mobile telephony provides access to markets and has strengthened farmers bargaining power, as they now have access to real time information and marketing alternatives. According to Stienen *et al* (2007), such access to ICT enables rural communities to interact with other stakeholders, thus reducing social isolation, widens the perspective of local communities in terms of national or global developments, opens up new business opportunities and allows easier contact with friends and relatives.

Table 3: Distribution of respondents by sources of information on enterprises (n=120)

Sources of enterprise information*	To a large extent	To a lesser extent	Not at all	Weighted score
Social sources				
Fellow professional	93.3	5.8	0.8	192.4
Family and friends	83.3	12.5	4.1	179.1
Extension agent	31.7	26.7	41.7	90.1
ICTs				
Radio	48.3	33.3	18.3	129.9
GSM	54.2	20.8	25.0	129.2
Television	41.7	27.5	30.8	110.9
Newspaper	20	29.2	50.8	69.2
Bulletin	12.5	21.7	65.8	46.7
Poster	3.3	22.5	74.2	29.1
Internet	5.0	15.8	79.2	25.8
E-mail	0.0	13.3	86.7	13.3
Fax	0.0	6.7	93.3	6.7
GSM features used*				
Voice call	77.5	10.8	11.7	165.8
SMS	38.3	23.3	38.3	99.9
Voice SMS	27.5	10.8	61.7	65.8
MMS	13.3	30.3	56.7	56.9
GPRS	11.7	18.3	70.0	41.7

* Multiple responses

Table 4: Distribution of respondents by level of use of ICTs

Levels	Frequency	Percent
Low	66	55.0
High	54	45.0
Total	120	100.0

Table 5: Distribution of respondents by benefits derived for enterprises from use of ICTs (n=120)

Benefits	Agreed	Undecided	Disagree	Weighted score
Easy to communicate to costumers	70.0	18.3	11.7	158.3
Information from mass media has assisted my enterprises	36.7	40.0	23.3	113.4
Enhanced quality control of enterprises	42.5	25.8	31.7	110.8
Profits has increased significantly	39.2	26.7	34.2	105.1
Information has helped in managing risks	34.2	30.0	35.8	98.4
Advert on mass media enhanced patronage	30.8	35.0	34.2	96.6

The benefits derived by the respondents were categorised into low and high levels based on 'above and below the mean' criterion. The distribution of the respondents by benefit levels in Table 6 showed that 51.7% of them have high level (substantial) benefit in their enterprises from the use of ICTs. This implies that despite limited level of use of the facility, the benefit was more pervasive.

The fact remains that the realisation of these benefits may not come just because the ICT infrastructures are in place; there is a huge gap between information residing in agricultural knowledge centres and rural communities. At local level, multi-stakeholder mechanisms are important to make relevant information accessible to the end users. Intermediary organisations need to connect rural communities to the available knowledge. The reality is that the users will

always want tailor-made, quality answers to their questions. These, among other challenges are the issues that need to be addressed alongside the provision of ICT facilities for the rural populace.

Table 6: Distribution of respondents by level of benefits derived from use of ICTs

Levels	Frequency	Percent
Low	58	48.3
High	62	51.7
Total	120	100.0

Constraints to use of ICTs

Data on constraints to the use of ICTs in the study area were solicited. Results in Table 7 shows that the areas in which the respondents realised substantial constraints to the use of ICTs were unreliable power supply (149.1), missed information (137.4), technical knowledge in the use of facilities (120.1), lack of relevance of information channel (114.1) and network fluctuation (112.6) among other ones. This revealed that irregular power supply is the most realised constraint to the use of ICTs in the study area. This is an issue that borders on public policy domain in the deployment of the tool. This informs the opinion that exploration and support of the connectivity details of ICTs are areas of significant research priority (Gelb *et al*, 2008). The social and political environment within which ICT projects operate is crucial and supportive policies and measures are required. Awareness-raising, developing functional supporting systems and enhancing the capacities of stakeholders are some of the issues the experts have identified over time (Stienen *et al*, 2007). This is also based on the general lessons that success is not derived automatically from inserting ICT into isolated and poor communities.

Table 7: Distribution of respondents according to constraints to use of ICTs

Constraints	Serious constraints	Mild constraints	Not a constraint	Weighted score
Unreliable power supply	58.3	32.5	9.2	149.1
Missed information	50.8	35.8	13.3	137.4
Technical know how	39.2	41.7	19.2	120.1
Lack of relevance of information channel	30.8	52.5	16.7	114.1
Network Fluctuation	36.7	39.2	24.2	112.6
High cost of subscription	38.3	35.8	25.8	112.4
High cost of maintenance	30.0	50.0	20.0	110.0
Maintenance of tools and equipment	27.5	54.2	18.3	109.2
Inadequate access to ICT tools	30.0	44.2	25.8	104.2

Hypotheses of the study

The first hypothesis was tested between selected socioeconomic characteristics of the respondents and level of ICT use. This hypothesis was tested using a binomial logit regression model. The result of the analysis in Table 8 showed that formal education increased the odd of being a high level user of ICTs, while number of dependants reduced the odd of being a high level user of the facilities. This findings implied that those who have more formal education uses ICTs more than others and those who have larger number of dependants do not use ICTs as much as those with fewer dependants. The finding on relevance of education to use of ICTs can be explained by the fact that the educated respondents will appreciate the relevance of the facilities more and encounter lesser constraints to use of the facilities. Some authorities (CTA, 2006; Munyua, 2000) have established that one of the obstacles to the use of ICTs in the pursuit of sustainable livelihood is lack of access to education and training. The finding about number of dependants as disincentive to use of ICTs can be explained by burdensome logistic associated with the maintenance of the dependants which may hinder their use of ICTs.

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Table 8: Binomial logit regression between socioeconomic characteristics and level of ICT use

Personal characteristics	Standardised coefficient	t-value	p-value
Constant	-2.786	-1.180	0.238
Sex	0.955	1.521	0.128
Marital status	-0.359	-0.894	0.371
Age	0.680	1.836	0.066
Number of children	0.795	0.392	0.695
Formal education	0.246	3.642	0.000*
Other education	-0.316	-0.867	0.386
Family size	-0.210	-1.256	0.209
Number of dependants	-0.412	-2.747	0.006*
Religion	-0.465	-0.831	0.406
Monthly income	0.342	1.798	0.072
Sample size = 120	Log likelihood function = -46.94567		
Chi-squared = 71.262	Restricted log likelihood = -82.57666		
Degree of freedom = 10	Level of significance = 0.05		

* Significant variable

The second hypothesis was proposed to test whether constraints and benefits informed the use of ICTs among the respondents. The hypothesis was pursued using Pearson's Product Moment Correlations. The results of the analysis in Table 9 revealed that there is significant but negative relationship between constraints and use of ICTs while there is significant and positive relationship between benefits derived and use of ICTs. The findings imply that the use of ICTs is significantly impeded by constraints while the benefits derived significantly encouraged the use of the facilities.

Establishing the fact that constraints are strong enough to impede the use of ICTs is instructive. It is important to identify specific issues that constitute greatest constraints to the deployment of the technology. According to Gelb *et al* (2008), researchers have not devoted sufficient time and resources to identify solutions for effective adoption of technologies, including the ICTs. Such dedication is necessary and would amount to prioritising the pursuit of practical solutions to constraints to effective ICT uptake.

Table 9: Correlations analysis between constraints, benefits derived and level of use of ICTs

Variables	Correlation (r) value	p-value	Decision
Constraints	-0.258**	0.005	Significant
Benefits derived	0.638**	0.000	Significant

** Correlation is significant at the 0.01 level (2-tailed)

CONCLUSION

The study established that most of the respondents in the rural areas are into farming as an occupation. Price and sales information are the mostly sought information by the rural entrepreneurs. The radio and GSM are the mostly used ICTs to access enterprise information. The study also established that accrued benefit was commensurate with extent of use though there are constraints that are strong enough to discourage use of ICTs in the study area. It can be safely concluded that better access to ICTs will promote rural enterprises and removal of constraints will facilitate further use.

RECOMMENDATIONS

Based on the findings of the study, the followings are recommended:
1. ICT Infrastructure for rural areas must be part and parcel of national infrastructure planning and programmes
2. The problem of reliable power supply must be addressed to encourage ICT use

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