RESEARCH ARTICLE

FACTORS DETERMINING ICT UTILIZATION AMONG WOMEN IN MUMIAS DIVISION, KENYA

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ARTICLE INFO	ABSTRACT
	In rural areas, women face major challenges which hinder their utilization of and deprives them the enjoyment that comes with Information and Communication Technologies (ICTs). This paper explores the factors that determine women's utilization of the ICTs in Mumias Division. The foregoing study was based on the assumption that ICT utilization by women brings about development. The purpose of the study was to establish the socio-economic factors that determine women's utilization of ICTs. A survey approach was adopted. The sample was made up of 120 respondents systematically sampled from the 600 households neighbouring the market centres of each location. The instrument used for data collection was a structured questionnaire. The data collected was subjected to inferential and descriptive statistics analysis. The findings showed that there is a significant relationship between the women's level of education and computer utilization and economic status of women and cultural values with the utilization of ICTs. The study, therefore, recommended to the policy makers that they should introduce computer learning in primary schools to introduce the skills early. It would be important too to sensitize men on the importance of modern technology to their women counterparts in development.

INTRODUCTION

Information and Communication Technologies (ICTs)

The range of technologies that serve information and communication needs in society, extends from print media, fixed telephone lines, satellite technology and the computer.

> The spectrum of what may be seen as ICTs includes a complex and heterogeneous set of goods, applications and services used to produce, distribute, process and transform information (Marcelle, 2000).

The ICTs sector is seen as consisting of segments as diverse as telecommunications, television, radio, computer, Global System for Mobile communication services as well as the content of the media.

Computers

A couple of years back, the computer was a tool for only a few users and institutions. The term 'information superhighway' is not a new one today, especially since it has lost its cluster in favour of other coinages such as the digital environment. The presumed goal of this worldwide system of computers is to give no lightening fast (high-bandwidth) voice and data exchange, multi-media, interactivity and near universal, low-cost access and to do so reliably and securely. In simple terms,

a computer is a programmable, multiuse machine that processes data into information. It is made of the hardware parts, which basically are the machinery and equipment, and the software, which instructs the hardware on what to do. Communication is extending into every nook and cranny of civilization.

Today, people equate cyberspace with the Internet. But it is much more than that, says Whittle (1997) in his book *Cyberspace: The Human Dimension;* cyberspace includes not only the World Wide Web, chat rooms, online bulletin boards and member based services like America online, but also things like conference calls and automatic teller machines. Recently in Kenya, the government reduced taxes on computer accessories. This decision was seen as a major boom for mass ICT users in urban areas as opposed to rural areas. However schools in most parts of rural Kenya lack trained teachers while others lack funds to maintain the computers thus rendering minimal use of the computers. Utilization of computers by women therefore remains a distant dream.

The Wireless Phone (Mobile Phone)

Mobile phone mania Law has swept the world. All across the globe, people have acquired the portable gift of gab; some make 45 calls or more a day. It has taken more than 100 years for the telephone to get to this point – getting smaller, acquiring push buttons, losing its word connection. In 1964, the * and # buttons were added to the keypad to allow users to interact with data services and equipment. In 1973, the first

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cell phone call was processed. In its standard form, the phone is still so simply designed that even a young child can use it. It is now becoming more versatile – a way of connecting to the Internet and the World Wide Web.

Critical Concerns on ICT Utilization by Women

Utilization of ICTs among women in Kenya is prevalent in the urban areas; but is only limited to those of the upper income class and a few from the middle-income class. However, for the majority of rural-based women in many parts of the country, this is still a far-away reality. While considerable optimism is vested in the promise of ICTs for development, it is also true that the ICT age is not all that rosy, especially for the rural women. ICTs have been a major force in development since they provide and foster communication which enhances exchange of information important for marketing, purchasing and also knowledge creation and dissemination. ICTs also allow for processes that were not possible previously, like cheaper and efficient seamless interactive communication. They also allow for bottom-up communication and easy storage and retrieval of information. While a lot of funds have been used to avail these ICTs, very little or no consideration has been made to understand the factors that determine women's ability to utilize ICTs to improve their livelihoods. The study, therefore, went to the grassroots to unearth these factors. The study sought to establish the factors that determine women's utilization of ICTs, especially the use of computers (internet, e-mail and website technology) and mobile phones, in order to recommend the best ways of availing the ICTs in the rural areas for use by women.

Access to the ICTs

Inequalities in Access

According to Koffi Annan, The so-called digital divide is actually several gaps in one. There is a technological divide – great gaps in infrastructure. These are content divide. A lot of web-based information is simply not relevant to the real needs of the people. And nearly 70 per cent of the world's websites are in English, at times crowding out local voices and views. There is a gender divide, with women and girls enjoying less access to information technology than men and boys. This can be true of rich and poor countries alike (Annan, 1995).

ICT Utilization by Women

Women's situation in the rural areas of Kenya is often characterized as a situation of conflict, which arises from the differences between the traditional family socialization and the socialization taking place in modern formal sector. The most important function for a woman in the rural area is her role as a producer of food and in the reproduction of the family, biologically and through labour force. It is to fully comprehend the development of this role that is necessary to incorporate the process of socialization. The rural women have gradually been burdened with greater obligation as family supporters while they simultaneously are obliged to render unpaid work on their husbands' fields, where cash crops are grown. The tendency often is that the cash crop income belongs to the husband and constitutes the women's income and means of livelihood (Boserup, 1970).

Hindrances to Women's Full Utilization of ICTs

In most societies worldwide, cultural and religious attitudes have resulted in discriminatory laws and or practices that, beginning at birth, prevent women from becoming full and equal partners in their nation's societies and economies. Throughout most of their life and in most settings, women have less opportunity than men to pursue education and to develop economic sufficiency. The result is that women, particularly in the developing countries, represent the majority of the poor, and their numbers are growing. In addition, although women make up approximately half of the world's population, they form $^2/_3$ of the world's illiterate, which discriminates them in land ownership laws, employment and development policies, resource allocation and traditional division of labour (World Resources, 1983).

Cultural Hindrances

Culture is a collective pattern of living that conveys the norms and values of society and that is handed down from generation to generation. It is dynamic and resilient and has positive, negative and neutral attributes. The studies of African cultures have to include on inquiry into the continuities of gender discrimination and to determine where the cultural, historical, gendered and racial markers, uphold, distort and undermine the real and the authentic. Because culture represents routine behaviour that carries norms and values of a society, it is often not easily changed. Okeke (2000) argues against the tendency to regard women discrimination inherent in cultural practices as being acceptable; because it is "tradition" that shows how patriarchy continues, even when it contains contradictions. For example, the contradictions between statutory and customary law and the weakness in statutory law can lead to the strengthening of traditional justifications that still privilege men in relation to property rights, inheritance laws, among others. This can result in "relations of power which keep in place an inequitable social structure that privileges the dominant gender" (Okeke, 2000). Culture has valuable and positive assets and provides effective models for gender research that can lead to the empowerment and advancement of African women. African Feminism, as defined in 1981, outlines the value of African women in the ideological, institutional and customary realms. Women's power bases are partly derived from cultural values that stress the potency of a female principle governing life and reproduction through motherhood and the centrality of children. Women can also control political and ritual spaces. Women's indigenous groups can provide important leveraging mechanisms for women and are instrumental in promoting sustainable development projects. So, rather than dismissing African cultures as archaic, we need to conduct more studies using culture as the paradigmatic framework that has the potential of producing action-oriented research capable of transforming society and empowering women. All said and done, culture has had an impact in women's utilization of ICTs. Women's interaction or the lack thereof with technology leads to resource constraints. The following are some cultural factors that impede women's utilization of ICTs in rural areas in Kenya:

1. Cultural attitudes discriminate against women's access to technology and technology education.
2. Women are less likely to own communication assets.

3. Women in poor households do not have the income to use public facilities.
4. Information centres may be located in places that are not comfortable visiting by women.
5. Women's multiple roles and heavy domestic responsibilities limit their leisure time centres may not be open when it is convenient for women to visit them.
6. It is more problematic for women to use facilities in the evening and return home in the dark.
7. If the expected benefits of the extension of communication network and access to a wider scope of information are to be realized, strategies that address the specific cultural context are needed to remove the cultural barriers to women's utilization of ICTs (Marcelle, 2000).

This factor will therefore be assessed to find its effects on ICT utilization by women in the study area.

Educational Hindrances

Universal primary education was enshrined as a human right in the United Nation's Universal Declaration of Human Rights in 1948. Over forty years later, the goal is still not in sight and a call on donors and governments to reaffirm their commitment to universal primary enrolment was part of the world's declaration for all issued in Jomtien, Thailand in 1990. The year 2000 was set for achieving this goal. It is now 2005 and we are still not near achieving universal primary education, and as pointed out dramatically in a report by Oxfam International (1999), we do not appear to be closing in on it. An article published by the Peace Corps indicates that in Africa, 20-30 per cent of female children attend primary school, and only 20–30 per cent of the secondary school children are girls. In Kenya, the education factor to ICT utilization by women cannot be underscored (Comings, & Kabler, 1984). The presidential working party on education and manpower Training (Kamunge Report) states that "Education and training should equip them [learners] with skills that enable them to live and positively contribute towards the development of their society and environment (Republic of Kenya, 1988). (Pearce *et al*., 1990) add that educational attainment is a measure of development. It is thus expected that women will have necessary educational standards and skills to enable them to utilize the ICTs meaningfully for the betterment of their lives. However, women are disadvantaged in that the environment does not allow most of them (especially in rural areas) to attain the standard of education that enables them utilize the ICTs. A female former Kenyan MP was quoted by Snyder and Tadesse (1999, p. 185) saying:

> I know of a school where two years ago there were 45 students; 22 girls and the rest are boys, I went back to that school and there were only 11 girls.

The Commission of Inquiry into the Education System of Kenya (CIESK), observes that the illiterate population in the country is predominantly female (Republic of Kenya, 1999). Education is predominantly important because the language of the computer is English, which is taught in schools. The most widely spoken language in the study area is Swahili and Luhya, which are not used in the Internet as well as in the GSM phones. There has never really been a strong enough argument over the link that exists between development and levels of education. Education may not be necessarily a compliment for economic and social progress, but it is an important element in the development equation. This is because it enables individuals and societies to unlock their potentials, expand their horizons and be global citizens.Women in rural areas have not attained beyond secondary education compared to women in urban areas. Education has been found to be a useful tool to women, as indicated in a research conducted in India by the institute of rural management in Anand:

> As part of the literacy campaign, as village women started coming together in the literacy classes, they not only discussed the general problems of the village, but also talked about the evils of excessive drinking. Their discussions focused on how in many (Pandey, 1997).

In their study of developing countries, the Peace Corps Organization found out that:

> The elite character of all education as well as its bias in favour of men everywhere in the world means that rural women are seldom literate - a fact that inhibits their ability to move in to new sectors when their traditional economic roles are superseded (Peace Corps, 1985).

In the modern world, where information and communication technology is catching up, women in rural areas should not be left behind. Therefore, the high number of primary and secondary school level among rural women hinders their authentic involvement in development. This coincides with a study conducted in 1987 by Roberta Mutiso who came up with this conclusion: the level of education in a community becomes an important criterion in spontaneous development because it influences the extent to which members can visualize alternatives to their present situation (Mutiso, 1991). Women are not only supposed to receive information but also to act on them. This involves having to understand the information first. If illiteracy and ignorance affects them, development will not be realized. Education as an independent variable therefore will be determined in the study to find the extent to which it is manifested in ICTs utilization.

Economic Constraints

Poverty, a major obstacle to the achievement of development, is the condition in which many women throughout the Less Developed Countries live. The growth in women's poverty is also a consequence of the economic crisis of the 1980s, which was particularly harmful to the poorest socio-economic groups. The curtailment of social services such as healthcare and family planning brought about by the multilateral banks' stabilization and structural adjustment policies, has in many ways forced women to make up the short fall in these areas, increasing their unpaid work burden. The little rural women get from their small pieces of land is just enough to give their families a simple meal, clothes and medical care. Nothing is

left for them to use to utilize the available ICTs. O'Barr (1991, p. 154) supports this view when he says:

> Their lack of greater success may rest not on lack of resources. It is a fact that men control most of the monetary benefits derived from women's efforts.

Political Powerlessness

Women are virtually absent from decision-making position in all realms of development. Only 3-5 per cent of the world's cabinet members are women and in 93 countries women hold no ministerial positions. Only 6 of the 159 UN member countries were headed by women at the end of 1997. Women fill a mere 10 per cent of the world's parliamentary positions and rarely do they hold top-level positions in public administration (Eckholm, 1995). This negatively impacts negatively on women as regards ICT utilization. This is because, even if policies favouring women's ICT utilization are formulated, it is always the man (at the top) who will ensure the success or failure of the policy. The women parliamentarians may be given a hearing but it largely depends on their male counterparts.

MATERIALS AND METHODS

Mumias Division is located in Butere/Mumias District. The study was based in Nabongo Location, which has 14,032 households, spread in its five sub-locations. The study adopted a case study design. In the study, women's utilization of ICTs was the dependent variable. While the factors affecting women's utilization of ICTs, such as cultural beliefs and level of education, were the independent variables, and since the independent variables cannot be controlled or manipulated, the ex-post facto approach was used. Since the sample population, was made up of households that were around the market centres of each sub-location, a total of 600 households were arrived at through stratified sampling; with every 5th household through systematic sampling to arrive at 120 women. The study employed a structured questionnaire to gather data from the sampled subjects. The completed questionnaire were collected and edited for accuracy, completeness and uniformity. The data was then entered into SPSS for windows version 10.0 where each variable was defined for analysis. Descriptive statistics was also used where frequencies and percentages were employed to facilitate comparison of the proportions of response made by women regarding the utilization of ICTs. The mean was used as a measure of central tendency to show the level of ICTs utilization in the study area.

RESULTS AND DISCUSSION

Level of Education and ICTs Utilization

Level of Education and Mobile Phone Utilization

The first objective of the study was to establish the socio-cultural factors that determine the utilization of ICTs among women. The level of education of women is one of the socio-cultural factors analyzed below. Data analyzed on Table 1 show that at least from all the levels including those who never attained formal education, utilize mobile phones. Few

respondents were found to utilize them, meaning that the level of education does not necessarily determine the utilization of mobile phones. However, education is a crucial requirement, which gives basic skills for the utilization of mobile phones. This data also reveals that the utilization of mobile phones by women in rural areas does not depend on their level of education.

Table 1: Level of Education and Mobile Phone Utilization

Level of education	Mobile phone utilization		Total
	Yes	*No*	
None/illiterate	2	15	17
Primary	7	45	52
Secondary	19	18	37
Diploma	10	4	14
Total	38	82	120

Level of Education and Computer Utilization

The level of education has severely affected the utilization of computers in the study area. Majority of the respondents have never utilized a computer. Those who have been able to access this facility either get it at their place of work or in from college students. These ones use computers mostly for work purposes and not to obtain information that could change their lives. The most affected group was the one that has never attained formal education and those who have attained primary school education. They could not utilize computers they had not acquired relevant skills to enable them make sense of what is availed by the computer and even to use that knowledge. The results, therefore, showed that the level of education of women determined their utilization of the computers. Table 2 shows the response rate to computer utilization according to levels of education.

Table 2: Level of Education and Computer Utilization

Level of education	Computer utilization		Total
	Yes	*No*	
None/illiterate	0	17	17
Primary	0	52	52
Secondary	8	29	37
Diploma	11	3	14
Total	19	101	120

Income and ICTs Utilization

Income and Mobile Phone Utilization

Income disparities are another key determinant of differential ICT utilization. This was determined by asking the respondents to indicate the category of approximate level of income they fell under. As shown in the table below, those who earned between 3001–5000 Kenya shillings were more enabled to utilize ICTs than their counterparts in other income categories. Those earning above Ksh 5000 were found to own mobile phones. This was probably because many of them were civil servants and businesswomen who had to work throughout the day and may be needed the phones for daily communication and transactions. Women did not get enough money to enable them to fully utilize the available ICTs.

Income Level and Computer Utilization

Most women in the study area were found to have an estimated monthly income of between Ksh 1000 to Ksh 3000.

This income was found to be too low to allow utilization of computers. Many such respondents have other responsibilities, which they would rather take care of than use the money to visit the cyber and other venues where they can access computers.

Table 3: Monthly Income Distribution and Mobile Phone Utilization

Monthly income	Mobile phone utilization		Total
	Yes	*No*	
Less than 1000	6	60	66
1001-3000	7	14	21
3001-5000	14	5	19
5001-above	11	3	14
Total	38	82	120

Many respondents who earned an estimate of between Ksh 3001 and Ksh 5000 utilized the computer. Such respondents were found to be either employees of the post office, college students and private sector employees. These women found the computers in their places of work and therefore the nature of utilization was mostly work oriented and very little socialization. Generally, there was a low level of computer utilization in the area attributed to the low level of development. Most respondents were not aware that they could get information that could help them in business and daily life. The prevailing perception was that computers were for those who worked in offices. This meant that the level of income of women determined their utilization of computers. The table below shows the relationship between income levels and computer utilization.

Table 4: Monthly Income Distribution and Computer Utilization

Monthly income	Computer utilization		Total
	Yes	No	
Less than 1000	2	64	66
1001-3000	3	18	21
3001-5000	10	9	19
Above 5000	4	10	14
Total	19	101	120

Culture and ICTs Utilization

Culture has become a thorny issue in ICT utilization among women. Women are not allowed to access ICTs and their level of involvement at home is negligible. All important decisions are made by the husband and in his absence, a close male relative. In many cases, women's daily chores are restricted to cooking and taking care of the children and the home. The women's mobility is also restricted with some women having to obtain permission from their husbands, which they are often denied.

This was reflected in mobile phone as well as computer utilization, as shown in Table 5. Though few respondents claimed that their lack of ICT utilization was caused by their husbands' denial of them, the impact of men controlling them was greatly felt. Another cultural practice that impacted negatively on ICT utilization was the fact that girls were not taken to school since they were to be married off early to get dowry. This analysis was in response to the first objective, which was to establish the socio-cultural factors that determined the utilization of ICT among women.

Table 5: Cultural Values and ICTs Utilization

Not allowed	Mobile phone utilization		Total	Not allowed	Computer utilization		Total
	Yes	No			Yes	No	
Yes	4	16	20	Yes	13	7	20
No	34	66	100	No	54	46	100
Total	38	82	120	Total	67	53	120

CONCLUSIONS

It is evident that ICTs provide opportunities to recognize economic activities in ways that can bypass the traditional dependence of women producers on male dominated and exploitative market structures, including middlemen. The ICTs arena needs to be sensitive to women's needs through ICTs policy and programmes designed and implemented creatively for optimum effectiveness. From the foregoing study, it was evident that ICTs are organized on elitist, patriarchal and capitalist values. There is need for bottom-up ICTs production that will guarantee sustainable utilization. This means that the content of ICTs should be drawn from all stakeholders', women included. It is clear that the socio-cultural factors that determine the utilization of ICTs among women are their level of education and cultural practices. This was the case in the use of computers, but in the case of the mobile phones, it was accepted that there were other factors, other than the level of education, that determined their utilization. On culture, the assumption that there was no relationship between cultural values and ICT utilization among women was rejected, meaning that there is a relationship between cultural values and the utilization of ICTs among women. Economic factors, such as one's occupation and the level of income, also determined the level of ICTs utilization.

RECOMMENDATIONS

Based on the study, the following recommendations made: Allocation of ICT Development Resources. The government and NGOs efforts to reduce gender inequality in communication are woefully inadequate. Efforts should be made to ensure that resources are allocated for the purposes of ICTs development and women themselves should control these resources. To add to this, loans should be given to women who are in business at a low interest rate so that they can be facilitated to consume information. Women should be allowed to make choices and decisions without interference from their husbands, i.e. they should be given economic independence.

Create Culturally Resonant Content

One of the most significant barriers to the use of ICTs in rural Kenya is that the information products which are created, circulated and transformed using electronic communication technologies, are predominantly in English. Language is one aspect of cultural meaningfulness and resonance. Appropriate technology has been defined and prescribed in ways that has functioned as a tool of exclusion. Unless information content is produced and transmitted in a language which can be understood by the rural women, and in ways, which reflect their priority issues of concern and shared values, ICTs will

remain distant and meaningless. Sara Macharia of Femnet, a Nairobi based Network for African Women, agrees with this when she says:

> The relevance of information being disseminated may be readily accessible but sometimes the materials being transmitted may appear too technical, too difficult to understand or having no bearing to the African situation, therefore causing users in the region to ignore such material.

On computer utilization, browsing and search tools are not particularly efficient on the internet, and this leads to searching being very time-consuming, for women whose time is in short supply. As much as they should be allowed to thrive, those practices that hinder girls' education should be done away with. These include early marriages and marrying girls off to get school fees for boys. Women should be given a chance to unlock their abilities and should not be condemned for doing so.

Education

Women should be allowed to attain the highest education level they desire while the illiterate ones should enroll in adult learning classes, and in this case, ICT utilization should be taught. The government should make education up to secondary school level compulsory to all children and provide adequate facilities for the same. This is because by enhancing higher education, the utilization of ICTs is promoted indirectly. Girls, as well as boys, should be given education in science and technology. In summary, ICTs should be global in scope and not restrictive in terms of access. They should also be affordable. Three important recommendations come forth in relation to this:

1. There is need to define the needs of women in rural areas through the available information.
2. There should be commitment to providing multilingual translation and development of tools for processing texts in non-English characters.
3. NGOs and other interested institutions at the grassroots should be encouraged to re-disseminate and repackage information to illiterate populations without online facilities.

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