



E-skills for rural development: Insights from rural women in Zimbabwe

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ABSTRACT

This paper was motivated by the need to locate and discuss the role and place of electronic skills to strengthening and expanding the development footprint of women in rural development. The study analyzed the levels of electronic literacy among rural women who attended adult literacy classes in deep remote areas of Zimbabwe. The study revealed that most women lack e-skills. A few were learning basic electronic skills through their electronically literate family networks. Consequently, the study concluded that it is important to empower rural women with electronic skills for community development.

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Introduction

Rural women play a pivotal role in the rural economies of both developed and developing countries [6]. Rural women's primary asset is their own labor, therefore one of the keys to empower them is to ensure more and better rural employment, whether waged or self-employed enterprise [8]. Income generating activities can improve the livelihoods of rural women according to [14]. The millennium development goals (MDGs) declaration emphasized that woman empowerment is a critical factor in the eradication of poverty. The post MDGs, sustainable development goals (SDGs) locate development initiatives aimed at strengthening the role that women, children, the elderly, disabled and minorities play in furthering the sustainable development agenda in the World, as emphasized by the UN Secretary, [1]. Given that the term of the millennium development goals (MDGs) expired at the end of 2015, it is important to analyse the extent to which the MGDs have been achieved. Such an assessment will also feed into discussions aimed at enhancing the operationalisation of the sustainability development goals (SDGs). Literature review is rich with numerous studies showing that rural women around the world have constrained access to productive resources, skills enhancement and service utilization owing to lack of or inadequate electronic skills to make a bigger contribution to development [3]; [22]; [8]; [5]; [7]; 21.

In this context, efforts and activities aimed at reversing the lack of inadequate electronic skills to support rural growth and development trajectories becomes an important intervention area. In Zimbabwe, the government of Zimbabwe, non-governmental organizations and voluntary organizations directly and indirectly contribute to various efforts and initiatives focusing on adult literacy classes regardless of gender since the year 1980 [15].

Study's aim and objectives

The study's major aim was to analyse rural women's electronic skills, post the adult literacy classes introduction. In

order to assess the impact and lack of impact thereof, the following study objectives were generated, namely:

1. To describe the educational qualifications of the women in the village;
2. To explore the study's village areas' potential and opportunities for rural development
3. To recommend on how rural women can apply electronic skills to sectors with potential for development to enhance the livelihoods of rural communities.

The study focused on rural women who were final year adult literacy class students of 2014 in Muchena village, Mutasa District, Manicaland Province of Zimbabwe. The study's major argument was based on the fact that if literacy is defined as the "ability to read, interpret and compute using printed and written materials associated with varying contexts", therefore any program that is aimed to eliminate illiteracy should incorporate all components of literacy [22]; [21]. Figure 1 presents the locality study area of Muchena village in Mutare, Zimbabwe. Insert 1.1 shows the map of Zimbabwe. Insert 1.2 shows the location of Manicaland Province in the eastern parts of Zimbabwe. Manicaland province is highlighted in red. Insert 1.3 shows the location of Mutasa District in Manicaland province. Mutasa district is one of the seven rural district councils located in Manicaland province. Insert 1.4 presents the google image of Muchena Village boarded in red, which is the case study.

Method

The participants of the study were women aged between 35 to 60 years, who had enrolled for their final year adult literacy classes at Kubatana Vocational Training Center in Muchena village. Apparently the whole setup is funded mainly by the government of Zimbabwe and voluntary organizations.

During the first phase of data collection, participatory observation was implemented, whereby the researchers observed the women using electronic gadgets. The methodology swung from "participants as observers" to

“observers as participants”. The gadgets that were used in the study sample included gadgets like cellphones and computers.

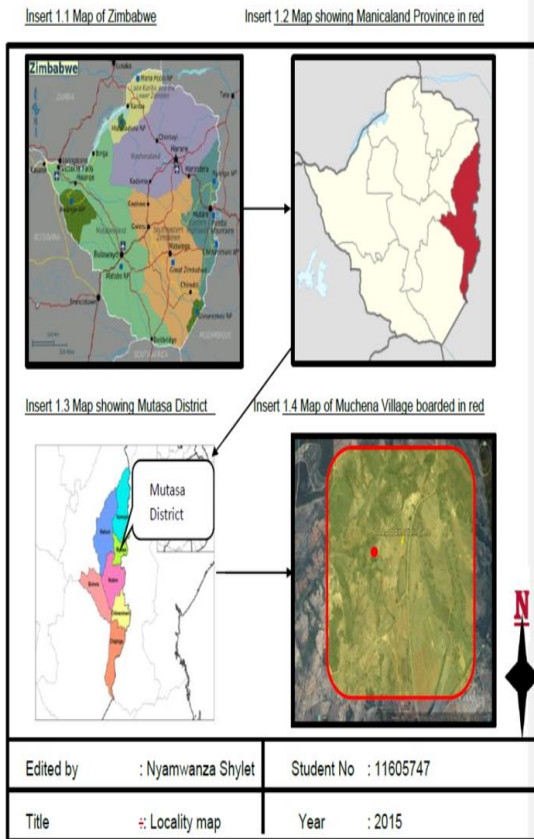


Figure 1: Locality map of study area.

Source: Mutasa District Strategic Plan 2015

After the participatory observation exercise, the researcher initiated conversations around electronic skills. On the second phase of data collection open ended questionnaires and diaries were distributed among the participants. The questionnaires were structured in a way that they could clearly outline their strengths and weaknesses in terms of electronic skills. In the diaries they were asked to record their daily tasks, and the time taken to complete each task. The director of Muchena village adult literacy class school was interviewed to understand the kind of courses that were offered and challenges they were facing as an institution.

Literature review

Figure 2 presents a conceptual framework used in rural women's electronic skills, post adult literacy classes introduction in Muchena village, Mutare Zimbabwe. Overall, electronic skills deployment and skills transfer is a complex and complicated matter. Grafting and implanting a strong e-skills culture and environment in rural areas requires either or a combination of improvement, changes or reforms regarding the legal frameworks, policy context for promoting information and communication systems, rural institutional information systems as well as understanding the cultural context to find the appropriate entry levels including generating a funding and scaling up strategy for the conceptualization, planning, implementation and sustainability of a vibrant and appropriate e-skills strategy and action plan.

The importance of electronic skills literacy in rural areas

[13] defined rural development as the multi-dimensional, encompassing improved provision of services, enhanced opportunities for income generation and local economic development, improved physical infrastructure, social cohesion and physical security within rural communities,

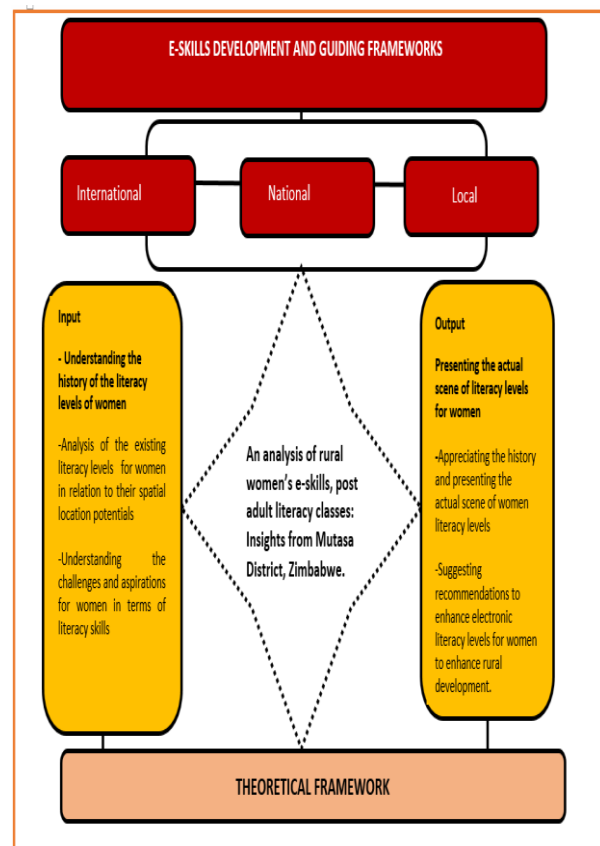


Figure 2 Conceptual framework of study

Source: Authors own construct 2016

active representation in local political processes, and effective provision for the vulnerable. Electronic technology is changing livelihoods of many communities, whereas access to use of this electronic technology is not being distributed evenly across the globe especially in rural areas [10]. Based on author's fieldwork observation in 2015, the major economic activity in Muchena village is forestry production. However, agriculture and brick moulding are some of the economic activities that are practiced at a lower scale. Each of these three activities is going to be explained in detail on how the application of electronic skills can enhance rural development in the village.

Forestry sector

The climate of the area that was studied is good for forestry productions. Generally forestry plantations projects progress well in areas which mostly experience perennial rainfall and low to medium temperatures throughout the year [13]. This is evidenced by some of the land whereby forestry production used to be practiced by previous farmers who left the area. There are remains of gum tree off-shoots which are not being maintained, yet during the day the unemployed women in the village usually go to there to look for firewood. The African Union Commissioner for Rural Economy, [20] explained that investing in women in agriculture is critical to Africa's economic transformation. She explained this during the Africa Green Revolution session which was held in Ethiopia in September 2014. [20] pointed out that improving women's potential would require investments in science and technology to increase productivity. According to [12], rural women are resourceful economic agents who contribute to the income of families and the growth of communities in a multitude of ways.

If the women are trained for electronic literacy they can be able to employ themselves in forestry production other than

being limited to use the timber as firewood. This is because in the forestry sector, electronic skills can be used for surfing the internet on forestry management, transforming timber into different products other than firewood, use machinery to monitor and harvest plantations as well as engaging in online discussion forums. This will create jobs; generate a lot of timber for exporting, and generally improving the economy of rural areas.

Agricultural Sector

If farmers are trained for electronic literacy their livelihoods will be improved. [19] explains that if farmers are empowered electronically, they may surf the internet for information about crops, animal husbandry production techniques, climate change and disaster risk management. They will also be able to share this information with colleagues through the use of e-mails. On the internet, there are some websites for agriculture which can cater for discussions about agriculture via the internet. The *Accuweather* database is an application that is available on smart phones. You can always enquire about weather forecasts on this website. This can assist farmers to plan ahead having in mind the kind of weather to be expected. There are technological machines like the heat-watch electronic detection system (HW) which enhance the productivity of cattle. The HW system is an electronic device, with software that is designed to detect a cow that is now ready to release an egg for fertilization [9]. This allows farmers to prepare in time for these cows so that they have the required levels of iron in order to carry the fertilized egg. Such kind of machines can improve agricultural management and monitoring, thereby improving the economy in rural areas. Policies and legislation that improve agricultural output are essential for rural women to take advantage of economic opportunities. Translating women's agricultural work into economic empowerment requires transforming gender relations at all levels [11].

Brick Moulding

Brick Moulding is also practiced in some parts of the village with the appropriate soils. Electronic skills can assist the women to enlarge their scale of production. Geographers use machines that can automatically detect appropriate soils for brick Moulding. According to [2] there are a lot of machines they have that can make boost brick making projects. For example the Egg laying range plant, this can work using electricity, petrol or diesel depending on the client's requests. This machine is automatic and its production capacity is from 10 000 bricks per day going upwards. Another example is the Fly-ash automatic machine, with the ability to convey finished bricks as well as weighing of the products on the belt conveyor with digital indicators and auto discharge. Therefore, unless these rural women are empowered electronically, they will not be able to read digital language and enhance their construction industry in the brick Moulding sector.

Other activities in the village where e- skills literacy is essential

Besides the three major dominant activities taking place in the village, there are other activities where electronic skills literacy is essential as well. Currently, in Zimbabwe mobile money transfers are the most common mode of money transfers, with the *Ecocash* mobile money transfer system being the most used one. This mobile phone facility has reached all parts of the country including Muchena village. These are such kinds of facilities which a person can use without assistance. Most men working in urban areas are using

these mobile money transfers to send money to their families in rural areas. Most banks are decentralizing their services to deep rural areas through the use of agents. Through the use of these facilities even pensioners do not need to travel to the city for their pension grants. Most of the old age group in the village is suffering from chronic diseases like sugar diabetes. To minimize the rate of people travelling to medical centers for medical checkups, the medical field approved apparatus like sugar level detectors can be used. Only if these women were electronically literate, then they would be able to use them for themselves and their families.

Through using these services they can save resources needed to travel, and use it to top up their resources for rural development projects.

Discussion of Study Results and Findings

The age groups of the women who participated in the study are shown in Figure 3.

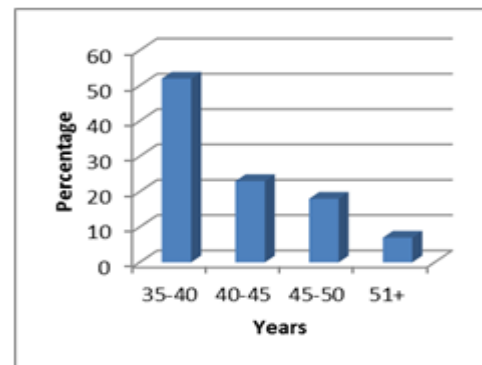


Figure 3 :Age group profile of research participants.

Source: Authors fieldwork 2016

Most of the women studied were in their late thirties. This shows that for the previous thirty years going upwards, women were not having access to education, which is why that age group is now flooding the adult literacy classes. Sixty-six percent of these women had literate husbands working in urban areas, which may imply that even up to now the society in rural areas is continuing to hold traditional values of expecting women to establish rural homesteads while husbands work in urban areas. Figure 4, illustrates the employment status of the participants.

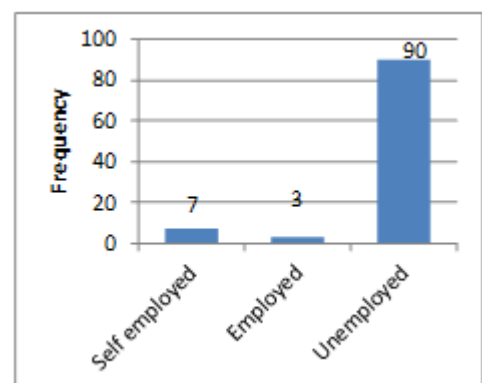


Figure 4: Occupation of Research Participants

Source: Author's Field Data, 2016

Most of the women are not employed. The self-employed group occupies a larger percentage than the employed group. However considering that most of them are attending adult literacy classes, if they are trained for electronic skills literacy they can self-employ themselves through development initiatives like forestry and agriculture. Figure 5 presents the spatial distribution of Muchena's development potential.

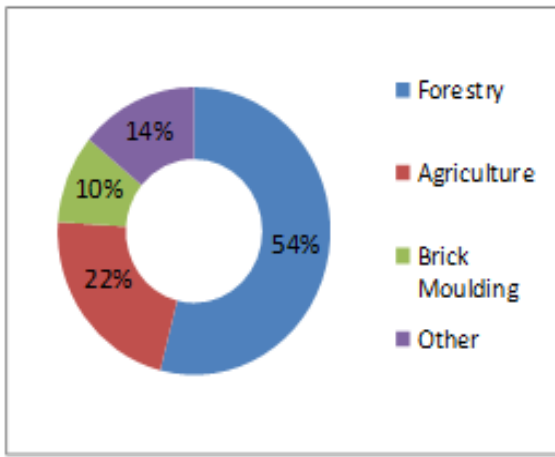


Figure 5: Spatial distribution of village's Development potential.

Source: Authors fieldwork 2016

Forestry production is the most dominant activity which has potential in the village.

This is evidenced by the fact that about 10 years ago there were some farmers who used to engage in forestry production in the village. They produced a lot of timber which they even exported to Mozambique, a country which is thirty kilometers away from the village. However after they left no one took over from where they left. Therefore the villagers are just using the remaining off shoots and rejects for firewood as no one is able maintain and continue with forestry production. If the community was electronically literate they could just surf the internet on the forestry management strategies. The same applies to the other activities like agriculture and brick Moulding, whereby residents are just using Indigenous Technical Knowledge Systems to implement. The activities which fall under the "others" sector include dressmaking, baking and knitting. Figure 6 presents the spatial location of women according to each ward's dominant development initiative.

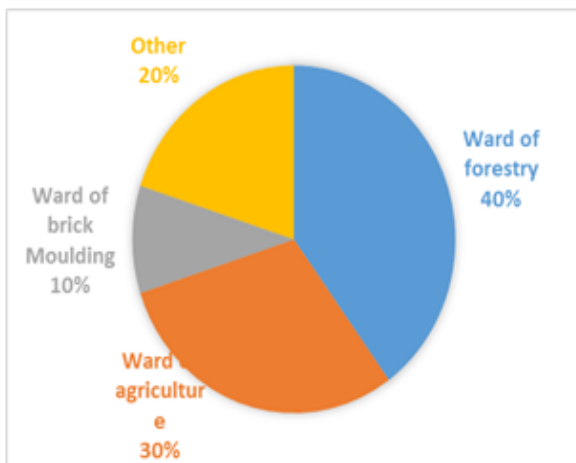


Figure 6: Spatial location of women according to each ward's dominant development initiative

Source: Authors fieldwork 2016

Generally the women are evenly distributed throughout the village. This is because activities which fall under the "others" section are being carried out in all the other three sectors. For example activities like dressmaking are not affected by the terrain of the landscape. Figure 7 presents the level of skills to operate electronic gadgets of research participants.

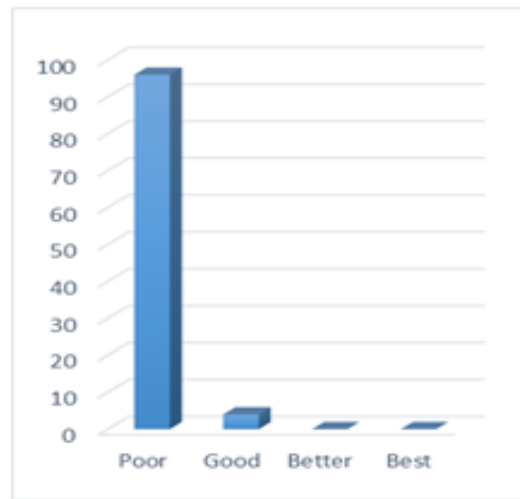


Figure 7: Level of skills to operate electronic gadgets
Source: Authors fieldwork 2016

Generally the study revealed that 96 percent of the rural women had poor electronic literacy skills despite the good reading and writing literacy levels. The participatory observation method exercise revealed that most women were finding it difficult to understand digital and electronic language as well as operating electronic gadgets. The major issue that was revealed by the questionnaires was that life was getting tougher for women because most of the everyday chores that are normally done by women are now being done electronically. Table 1 presents transaction/chores and activities which are now done electronically in Muchena village according to the survey respondents.

Table 1: Responses towards activities which have shifted from manual to electronic as at 2016

Activities that are now being done electronically	% women being assisted	% women still reverting to the non-electronic services
i. Job hunting	60%	40%
ii. Payment of water and electricity bills	80%	20%
iii. Paying school fees	20%	80%
iv. Reporting of complaints like pipe leakages to local municipalities	1%	99%
v. Withdrawal of money from financial institutions	93%	7%

Source: Author's Field Data, 2016

The few women who managed to showcase their e-skills explained that they were taught either by their children who were attending schools where electronic skills classes are compulsory or by their husbands' working in urban areas. The major point that emerged in the diaries, was that the women were taking a lot of time to complete chores that needed electronic skills. Most of them revealed they were taking more time because they would be looking for electronically literate assistants.

Discussion and recommendations

Based on the results, it can be concluded that the issue of electronic illiteracy is still a challenge among rural women despite the fact that they are now able to read and write. The data collected revealed that the poor levels of electronic literacy skills are not due to the absence of ideas. The idea is there but it is remaining documented. It looks like there were no clear steps that were introduced for the implementation process of the ideas. In today's world electronic literacy is a basic component of any initiative that aims to address the issue of illiteracy. If literacy is a basic need it should be fairly accessed by everyone. The lack of teaching staff for electronic skills classes only among other classes is an indication that it is not being prioritized. If you want to be a full citizen you should be literate, and this means mastering reading, writing, media, technological and informational skills" [16]. Effective legislation and policies need to assert and affirm rural women's rights to electronic skills. However, such arrangements would also be served by engaging in appreciative inquiry to with key stakeholders like traditional leaders at local level, through the provincial level up to the national level to build improved understanding of the need for change around the empowerment of women through electronic skills training.

Proposed e-skills enhancement and development strategies

It is important to first initiate alert programs, so as to raise awareness in the village that e-skills for women are very important. This can be organised by the traditional leaders in conjunction with Mutasa Rural District Council, together with the teachers of the adult literacy schools. Villagers can have meetings at their chief's homestead, whereby they can be addressed by municipal officials. Posters stressing the importance of e-skills for women can be pasted anywhere in the village. This is the most important step of them all, because if the community does not know the importance of these e-skills, then no one will participate in the other steps.

From awareness programs, then short term to long term programs can be formulated. E-skills development should be part and parcel of the relevant policies of rural development. Teachers can travel door to door in the village, auditing the actual number of women who don't have electronic skills. In the medium term resources and funds should be assembled, for e-skills training for women. In the long term the wards within the village, which have potential for rural development through e-skills enhancement should be outlined in the Muchena Spatial Development plan.

If all these goals are achieved, at the end there will come a point where the municipal officials of Mutasa Rural District

will integrate the e-skills of the rural women in relation to the wards with potential for rural development. This will attract funds for rural development from the national government. The proposed strategies were summarised in a table 2.

Conclusion

In a nutshell the study concluded that any programs aimed at promoting rural development through women, should include all aspects of literacy including e-skills development. The contribution of women is limited by lack of access to resources and persistent traditional beliefs which need to be addressed to allow the realization of their full potential in rural areas. According to [17], poverty cannot be defined simply in terms of lacking access to sufficient food. It is also closely associated with a person's lack of access to productive assets, services and markets. Without access to these, it is unlikely that production and income earning capacities can be improved on a sustainable basis. The study stressed the point that rural development strategies can only be successful if there is integration of e-skills and resources of all residents to meet their different needs according to their levels of potential.

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Table 2: Proposed e-skills enhancement and development strategies.

Strategy	Project	Timeframe	Responsibility
Electronics skills literacy awareness among women	Initiating awareness/alert programs through village meeting poster. Mass education programs	Short term	-Mutasa Rural District Council -Muchena village traditional leaders. -Muchena village sub-office for Gender Related Issues
Including electronics skills in the relevant policy-making Issues	Initiating public participation program meetings to engage rural women	Short term	-Mutasa Rural District Council -The traditional leaders for Muchena
Formulating electronics illiteracy audits among women	Auditing: Analysis of the whole study area to come up with all illiterate women in the whole village	Short term	Mutasa Rural District Council
Introduction of a lot of professionals and equipment specifically to cater for electronics illiteracy	-Hiring a lot of Information technology officers -Buying electronics skills training equipment	Medium term	The department of Human resource management at Mutasa Rural District Council
Strategic planning	Creating a master plan electronic skills training for Muchena village and implementing demonstration project	Long term	-The department of Information technology at Mutasa Rural District Council

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