INTRODUCTION

Mobile phone technology has since developed to become the world’s most common way of transmitting voice, data, and services in the developing world particularly Sub-Saharan Africa (Gomez, Baron and Flore-Siffert, 2012; Fukua, 2013; Zyl et al., 2014). The Sustainable Development Goals (SDG) 2016 to 2030 development framework is premised on ICTs to achieve the world we want (Farming First, 2015; United Nations, 2015). SDG Goal 2 seeks sustainable agricultural solutions that will result in ending all forms of hunger by 2030 ultimately achieving food security (UNDP, 2016). Target 2.3 of SDG 2 talks about doubling the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

BACKGROUND

In Zimbabwe more than 60% of the population reside in rural areas and directly depend on agriculture for a livelihood, and more than half of these people are women (Mashoko et al., 2007; FAO, 2008; Umar and Nyanga, 2014). The smallholder farmers play a central role in the agriculture production and the growth of the rural value chain. The smallholder farmers are some of the most marginalised and vulnerable groups in the developing world and the problem is more pronounced if it is smallholder farmers (Asingu and Nchakhwuka, 2015; OECD/FAO 2016). The United Nations identified information and communication technologies as tools through which gender equality and women’s empowerment can be addressed. Thus ICTs are crucial to the establishment of a new social order which ultimately result in both women and men substantially contributing and participating in economic activities.

PROBLEM STATEMENT.

The adoption and effective utilisation of mobile telecommunication for agricultural purposes by women has proven to be difficult to achieve (Martin and Abbott, 2011; Masuku et al., 2016; Mittal, 2016). In some such cases there have been few when there is high percentage of ownership of mobile phones (Zanello, 2011; Masuku et al., 2016; Wyche and Steinfeld, 2016) and in some cases high literacy rates (Sam, 2014; Zyl et al., 2014; Nyamaba, 2017). In other cases some challenges has been observed to be of adoption and continual use. According to (Nama and Steel, 2011; Wims, 2011; Musungwini, 2018) some challenges occur as a result of techno-centric design, higher access costs and poor telecommunication service.

RESEARCH AIM AND OBJECTIVES

The ultimate aim of the present study was to develop a model for adoption and effective utilization of mobile phone technology for the sustainable development of smallholder agricultural. The specific objectives were:

a) To establish the challenges women face in their agriculture activities in Zimbabwe.

b) To establish the challenges women face concerning the adoption and effective use of mobile phone in smallholder farmers in Zimbabwe.

d) To establish the challenges women face concerning the adoption and effective use of mobile phone in smallholder farmers in Zimbabwe.

e) To establish the challenges women face concerning the adoption and effective use of mobile phone in smallholder farmers in Zimbabwe.

RESEARCH DESIGN

This research is a descriptive research and it used mixed method design. The researchers used two data collection instruments because they believed that the instruments will complement each other and this enables the validation of findings of this research. The instruments used are interviews and survey questionnaires.

Interviews:
The researchers conducted interviews with five women and of these five women was the Agritex officer of Boma area two were independent farmers running their families and the other two were with spouses. The author was assisted to conduct interviews with the research subjects by the Agritex officer. After visiting the area on 3 separate occasions without success I decided to enlist the assistance of the Agritex officer. Structured questionnaire was used to collect quantitative data and we issued 85 questionnaires managed to get 79 well completed and thus 6 questionnaires were discarded. This enabled the researcher to obtain uniform responses that were later subjected to quantitative analysis. The researchers provided pre-defined answers derived from literature review.

To establish the challenges women face in their agriculture activities in Zimbabwe:

<table>
<thead>
<tr>
<th>Access to land</th>
<th>14</th>
<th>63</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of farming tools and equipment</td>
<td>7</td>
<td>61</td>
<td>11</td>
</tr>
<tr>
<td>Limited access to land</td>
<td>35</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Limited access to markets (locational)</td>
<td>0</td>
<td>47</td>
<td>29</td>
</tr>
<tr>
<td>Reliable water supply</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited financing and insurance options</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unequal access to development resources, training and information</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsuitable public offices</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women don’t get paid for their labouring in agriculture</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No control over income from sales</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited access to information and Technologies</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The challenges women face concerning the adoption and effective use of mobile phone in smallholder farmers in Zimbabwe:

a) Lack of necessary knowledge and information to use mobile phones.

b) Illiteracy.

c) Lack of infrastructure.

d) Socioeconomic status.

e) High cost of mobile phones and services.

The state of infrastructure like network coverage, electricity and mobile support services in rural areas in Zimbabwe where farmers are located:

<table>
<thead>
<tr>
<th>Poor reception of network signal</th>
<th>Increase the number of base stations and reduce the number of mobile cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Absence of signal for other telecommunication operators</td>
<td>Government should put in place infrastructure sharing policy for telecommunication operators.</td>
</tr>
<tr>
<td>2 Absence of electricity infrastructure in some areas</td>
<td>There is need for solar power arrangement initiatives for smallholder farmers.</td>
</tr>
</tbody>
</table>
| 4 Absence of telecommunication infrastructure | PORTRAZ should erect base stations in rural areas that are unprofitable for telecommunication companies. The individual companies can then install their equipment on the erected base stations.

The mobile phone user-capability of Women Smallholder farmers in Zimbabwe:

The women smallholder farmers indicated that they can perform the following activities:

a) I can top up my own mobile phone using any means.

b) I can connect to the internet using my mobile phone.

c) I can send, receive and cash out money using my mobile phone.

d) I can take selfies using my mobile phone.

e) I can play games on my mobile phones.

However, it is important to indicate that these capabilities were variable across the participants and the table below illustrate that.

<table>
<thead>
<tr>
<th>Calling</th>
<th>SMSing</th>
<th>Mobile money services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera</td>
<td>Gaming</td>
<td>Facebook and internet</td>
</tr>
<tr>
<td>Twitter</td>
<td>Whatsapp</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES


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