



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 Fiore-Silfvast, 2012; Fuksa, 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, 2009; 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 these smallholder farmers are women (Asongu and Nwachukwu, 2016; 2016; 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 new social order which ultimately result in both women and men substantively contributing and participating in economic activities.

PROBLEM STATEMENT.

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

RESEARCH AIM AND OBJECTIVES

The ultimate aim of the poster is to develop a model for adoption and effective and continual use of mobile phone technology for the sustainable development of smallholder agricultural. The specific objectives were:

- To establish the challenges women face in their agriculture activities in Zimbabwe.
- To establish the challenges women face concerning the adoption and effective use of mobile phone in smallholder farmers in Zimbabwe.
- To establish the mobile phone user-capability of Women Smallholder farmers in Zimbabwe.
- To develop a model that can be used to speed up the adoption and sustainable use of mobile phone by smallholder women 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 out of these women one was the Agritex officer of Bomba 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.

RESEARCH FINDINGS

To establish the challenges women face in their agriculture activities in Zimbabwe.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Access to land.		14		53	12
Lack of farming tools and equipment.		7		61	11
Limited access to farm inputs.		7		65	7
Limited access to markets (lucrative).		3		47	29
Reliable water supplies.		41	38		
Limited Financing and insurance options.			15	59	5
Unequal access to development resources, training and information.		17	23	31	8
Unsupportive public offices.		11	29	36	3
Women don't get paid for their labouring in agriculture activities.		16	19	31	13
No control over income from sales.	13	9	6	31	20
Limited access to information and Technologies.		16	11	29	23

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

- Lack of necessary knowledge and information to use mobile phones
- Illiteracy
- Lack of infrastructure.
- Socioeconomic status.
- High cost of mobile phones and mobile services.

	The state of infrastructure like network coverage, electricity and mobile support services in rural areas in Zimbabwe where farmers are located.	
1	Poor reception of network signal.	Increase the number of base stations and reduce the number of mobile cells.
2	Absence of signal for other telecommunication operators.	Government should put in place infrastructure sharing policy for telecommunication operators.
3	Absence of electricity infrastructure in some areas.	There is need for solar power arrangement initiatives for smallholder farmers.
4	Absence of telecommunication infrastructure.	POTRAZ 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.

- I can top up my own mobile phone using any means
- I can connect to the internet using my mobile phone.
- I can send, receive and cash out money using my mobile phone.
- I can take selfies using my mobile phone.
- I can play games on my mobile phones
- I can use Twitter, WhatsApp and Facebook on my mobile phone.

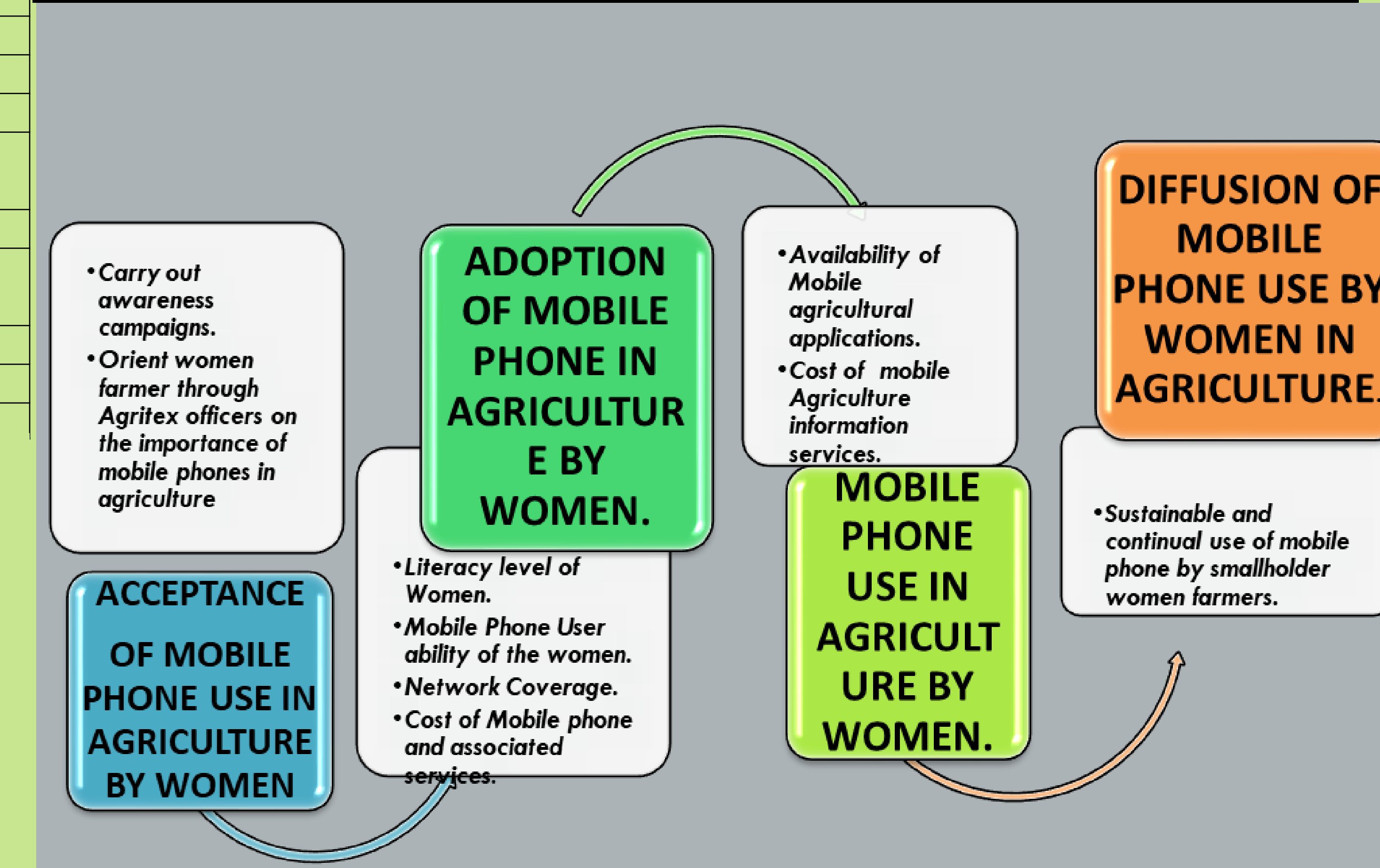
However, it is important to indicate that these capabilities were variable across the participants and the table below illustrate that.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Calling				38	15
SMSing				35	18
Mobile money services.				53	
Camera		3	12	31	7
Gaming			23	18	12
Facebook and internet		5	19	17	12
Twitter		29	19	5	
Whatsapp		31	29	12	7

RESEARCH FINDINGS

DEVELOP A MODEL THAT CAN BE USED TO SPEED UP THE ADOPTION AND SUSTAINABLE USE OF MOBILE PHONE BY SMALLHOLDER WOMEN FARMERS IN ZIMBABWE

THE PROPOSED MODEL FOR ADOPTION AND USE OF MOBILE PHONE FOR TEACHING AND LEARNING IN MARGINALISED COMMUNITIES.



CONCLUSION

This study also established that a good number of women owns a mobile phone, out of 79 respondents 53 had a mobile phone which is 67.1% of the respondents. Out of the 53 women who own mobile phones 19 that is 35.85% had smart phones while 34 respondents 64.15% had feature phones. 46 respondents 86.79% are subscribers of Econet wireless, while 5 respondents, 9.4% subscribe to Netone services, while a paltry 2 respondents, 3.8% use Telecel. The study also established that some women buy mobile phones for themselves, while others had their mobile phones bought for them by their husbands, children or some relatives.

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