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Technology Adoption by Rural Women: A Unified Theory of Acceptance and Use of Technology (UTAUT2) Analysis

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Abstract

This article analyses the factors that affect the adoption of technology by rural women in the Umguza district of Zimbabwe. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model, provides the theoretical framework for understanding the factors that influence rural women's adoption of technology. By situating the investigation within the UTAUT2 framework, the study seeks to offer a more refined understanding of the determinants affecting technology adoption among rural women and the implications for inclusivity. A deductive approach was used, and information was collected through a survey of 250 rural women in the 19 wards of Umguza district, as well as reviewing secondary data in the form of government, non-governmental, industry reports and scholarly articles. Regression analysis was used to draw insights into the factors influencing the adoption of technology by rural women. The study concluded that Performance Expectancy (PE), Facilitating conditions (FC), Social Influence (SI) and Effort Expectancy (EE) influence technology adoption by rural women in Zimbabwe. However, Hedonic Motivation (HM), Price Value (PV) and Habit (HT) were found not to influence the decision to adopt the technology. The results of this study help to shed light on the factors affecting technology adoption among rural women and map strategies to promote technology adoption. The recommendations from this study can provide insights to government, private sector, and civil society seeking to promote the adoption of technology by rural women and contribute to the body of research on digitalisation and adoption of technology by rural women.

Keywords: *Constructs, Digitalisation, Rural Women, Technology Adoption, Utaut2.*

Introduction

The advent of digitalisation has seen many countries adopting digital technologies to drive economic growth and has changed the way people interact, communicate, learn and work [1]. The digital economy in sub–Saharan Africa has been growing with over 160 million people accessing broadband services between 2019 and 2022, a 115% increase in internet users was experienced between 2016 and 2022 and over 191 million additional people have made or received a digital payment between 2014 and 2021 [2]. The number of active mobile phone subscriptions in Sub-Saharan Africa reached 415 million in 2022 and is expected to reach 689 million by 2028 [3]. This increasing access to mobile phones and the internet has the potential to unleash great opportunities for rural women when the adoption of technology is fully realised. Zimbabwe, among other African countries, has been experiencing a rapid adoption of digital technologies. According to the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), the number of active mobile subscriptions by the end of December 2023 stood at 14,973,816, representing a 97.7% mobile penetration rate and the internet penetration rate at 73.3% [4]. This extensive reach of mobile phones has the potential to present wide opportunities for rural women in the country. In 2013, the AU (African

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Union) initiated and launched the SMART Africa initiative, which aimed to achieve socio-economic development through ICTs (Information and Communications Technology) [5]. To ably implement this requires that there be ubiquitous access to ICT.

Studies conducted show that women are 50 per cent less likely to use ICT tools than men, thereby creating a gap, which is referred to as the digital gender divide[6]. In order to close this gap, it is critical to understand the factors that drive or deter rural women from adopting digital technology. The unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model provides a framework for understanding and exploring variables relevant to technology adoption for this study. The UTAUT2 extends the original framework which included performance expectancy, effort expectancy, social influence and facilitating conditions to add three more constructs namely, hedonic motivation, price value and habit [7]. In bridging the gap between the theory around technology adoption and the actual experiences of rural women, the study seeks to recommend pathways through which technology can be an enabler of empowerment and socio-economic development for rural women. The adoption rates and patterns among rural populations, especially among women, remain understudied and poorly understood. This study aims to bridge this knowledge gap by examining the factors influencing technology adoption by rural women in Zimbabwe, employing the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) as the theoretical framework. The correlation between ICTs and gender inequality is a relatively new phenomenon in Zimbabwe, with only a few studies undertaken in this regard [8]. This highlights a research gap and the need for further exploration of how ICT adoption and usage may impact gender equality. Understanding the specific dynamics of ICT adoption among different gender groups and its implications for gender inequality in Zimbabwe is crucial for promoting inclusive and equitable development.

Literature Review

The digital divide is a form of discrimination and is defined as an inequality in the power to communicate and process information digitally [9]. Technology plays a significant role in socioeconomic development, offering opportunities for education, health, agriculture, and business advancements [10]. For rural women, who often face societal and economic barriers, technology can provide pathways to empowerment, improved livelihoods, and greater inclusivity in the digital world [11, 12]. The significance of understanding technology adoption among rural women in Zimbabwe cannot be overstated. Rural women play a pivotal role in the socio-economic fabric of Zimbabwe, often being at the forefront of agriculture, education, and family welfare initiatives [13]. However, barriers such as limited access to technological infrastructure, low literacy levels, and socio-cultural constraints significantly hinder their ability to leverage technological advancements [14]. Researchers advocate for the adaptation and application of established technology adoption models like UTAUT2 in diverse contexts to broaden their empirical support and enhance their practical relevance [15].

The benefits brought about by technology adoption are shown to be far-reaching as this can help address barriers such as limited access to markets, financial services, and information. Adoption of digital technologies has the potential to bridge the gender gap, create new economic opportunities, and empower women in various aspects of their lives [16]. Opportunities resulting from the adoption of digital technologies include efficient use of mobile banking services, which enable rural women to access savings, credit, and insurance facilities, which are essential for entrepreneurial activities and income generation [17]. The benefits of adopting technologies include more business

opportunities, higher productivity and greater social connectedness. Adopting digital technologies enables rural women to participate in decision-making processes, hence the importance of adopting technologies has far-reaching tangible and intangible benefits [11]. Rural women have experienced improved access to markets, agricultural productivity and new avenues for employment resulting from adopting digital technologies. Mobile phones and digital platforms have created new avenues for income generation, provided access to market information, and facilitated financial transactions for rural women [18].

Technology adoption encourages networking and collaboration among rural women, promoting knowledge sharing, collaboration, and mutual support in their daily livelihood [19]. Additionally, it can result in cost savings, increasing the affordability and sustainability of entrepreneurship. The adoption of digital technologies empowers rural women to function efficiently in various aspects of life. Government policies and initiatives that support infrastructure development, subsidize the cost of technology, and promote digital literacy are critical [20]. Education and training programs that focus on building digital literacy are paramount [21]. Such efforts not only equip individuals with the necessary skills to use technology but also demystify technology and mitigate socio-cultural anxieties associated with its adoption.

Moreover, the customisation of technology to meet local needs and contexts significantly enhances its adoption. This includes the development of applications and services in local languages and the design of technology that is relevant and useful to the local populace, ensuring it addresses specific challenges or enhances aspects of life [22].

One of the most widely recognised barriers to technology adoption in developing countries is the issue of accessibility. This includes both the availability of technological infrastructure and the affordability of technology for the average citizen [20]. In many rural areas, the lack of reliable internet connectivity and electricity significantly hampers the adoption and effective use of technology. Additionally, the digital literacy rate poses a significant challenge. A considerable proportion of the population in developing countries lacks the necessary skills to leverage digital technologies effectively, arising from inadequate education and training opportunities [23]. The complexity of some technologies, coupled with language barriers—where technology interfaces are not available in the local language—further exacerbates this issue. Socio-cultural factors also play a critical role in influencing technology adoption. Traditional beliefs and values can affect perceptions of technology, sometimes viewing it with suspicion or as irrelevant to local needs and contexts. Moreover, gender roles and inequalities often result in women having less access to technology than men, limiting their opportunities for socioeconomic empowerment [11].

In conclusion, the literature review highlights the importance of inclusive digital transformation strategies that address rural women's needs and limit barriers for women and society to maximise the benefits of digitalisation. The case of Umguza women provides valuable insights into how the economic empowerment of rural Zimbabwean women requires the rollout of digital infrastructure and the creation of programs to improve digital literacy, affordable solutions for services like the internet, and a participatory design of digital solutions.

Theoretical Basis and Research Hypothesis

The UTAUT2 model is an extension of the 2003 UTAUT model by Venkatesh, Morris, Davis and Davis. It consolidates elements from eight models which were previously used to explain technology adoption which include the Theory of reasoned Action, the Technology Acceptance Model (TAM), the Motivation model, the Theory of Planned Behaviour (TPB), a combined Theory of Planned Behaviour/Technology Acceptance Model, the

Model of PC Utilisation, the Innovation diffusion Theory and the Social Cognitive Theory. The UTAUT2 model therefore presents a robust theoretical framework for investigating why rural women adopt or shun technology because it extends the assessment of technology adoption beyond merely analysing utility and ease of use [24]. The core constructs of the model namely performance expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Condition (FC) are critical as they encompass critical predictors of technology adoption and use. Several significant issues come to the forefront, and these include questioning the benefits, relevance, and effectiveness of digital technology for rural women, examining the accessibility of resources, understanding the role of communities and support networks, and addressing the responsibility of stakeholders in tackling digital infrastructure gaps [18]. This enhanced model also integrates three additional elements which are Hedonic Motivation (HM), Prive value (PV), and Habit (HT). These are very critical to rural women whose adoption may hinge on perceived enjoyment (HM), the economic assessment of technology compared to its benefits (PV) and the degree to which the use of technology becomes automatic and a key part of their daily routines of the technology [25]. Table 1 below summarises the definitions of the seven key constructs in respect of rural women's technology adoption.

Table 1. Definitions of UTAUT2 Constructs

Construct	**Definition**
Performance Expectancy (PE)	The degree to which rural women believe that using technology helps them improve productivity and performance
Effort Expectancy (EE)	Ease of use of the technology as perceived by rural women
Social Influence (SI)	The impact of social factors on the rural woman's decision to adopt technology i.e. influence of peers, family, and social networks
Facilitating Conditions (FC)	The degree to which rural women believe that technical infrastructure, technical support and training exist to support technology adoption
Hedonic Motivation (HM)	The degree of fun or pleasure from using technology
Price Value (PV)	The trade-off between perceived benefits and monetary cost of using the technology

Habit (HT)	The extent to which rural women automatically use technology in response to cues in their environment

The study developed and tested the following Hypothesis:

H1. PE influences technology adoption by rural women.

H2. EE influences technology adoption by rural women.

H3. SI influences technology adoption by rural women.

H4. FC influences technology adoption by rural women.

H5. HM influences technology adoption by rural women.

H6. PV influences technology adoption by rural women.

H7. HT influences technology adoption by rural women.

Materials and Methods

The study utilised a quantitative approach, employing a survey method to analyse the adoption of technology by rural women. Data collection involved a survey conducted by administering questionnaires, with close-ended questions, to 250 Umguza women in all 19 wards in the district. Using recommendations from prior studies on sample size, a ratio of 1:10 was used for each set of factors to be analysed [26]. The questionnaire had a total of 24 items yielding 240 respondents, hence 250 questionnaires were distributed A stratified random sampling technique was applied to select participants, ensuring a representation across different wards within the Umguza District.

The project methodology involved a literature review of various articles, guided by the UTAUT2 framework which provided insights into the performance expectations of rural women regarding digital technologies. Primary and secondary data sources were used in data collection. Statistical analysis techniques were used on the quantitative survey data and informed the interpretation and conclusions of the results about the analysis of technology adoption by rural women. Recommendations were made on how to promote the adoption of technology by rural women in Umguza guided by the study findings. The study findings play a great role in informing policymakers, organisations and individuals who deal with women empowerment and the rural women themselves on providing suitable strategies to promote technology adoption. The study also contributes to the existing body of research on technology adoption through digitalisation and how it impacts the livelihoods of rural women. The main channel for disseminating these findings will be academic publications, industry reports and presentations to various and relevant conferences, workshops and seminars.

Results

The analysis of data included classifying the responses following the UTAUT2 constructs. Then SPSS was used to generate descriptive statistics. Reliability testing and regression analysis were done to analyse and present the data from the responses. A total of 250 responses were obtained signifying a 100% response rate as snowball sampling was used where respondents referred the researcher to potential respondents who fit the criteria.

Demographic Characteristics of Respondents

The demographic characteristics of the 250 respondents are summarised in Table 2 below.

Table 2. Demographic Characteristics of Respondents

Variable		**No of respondents**	**% Contribution**
Age (yrs)	16-24	26	10.4
	25-30	59	23.6
	31-40	59	23.6
	41-50	44	17.6
	51-64	34	13.6
	65+	28	11.2
Education Level	None	54	21.6
	High school certificate	84	33.6
	Diploma	63	25.2
	Degree +	49	19.6
Occupation	Formal	61	24.4
	Informal	106	42.4
	Paid Agricultural work	42	16.8
	Unpaid Agricultural work	34	13.6
	Other	7	2.8

The questionnaire distribution was equitable across the relevant agent groups from 16 years of age. 16 years was set as the lower limit as it is the minimum age at which an individual can purchase a mobile network Subscriber Identification Module (SIM) card for connectivity purposes and register it in their name. The majority of the respondents, 47.2% were between the ages of 25 and 40 years of age. These are the age groups that are touted as being most economically active and have an interest in using technology to advance their income-generating activities. In terms of education, the highest number of respondents had high school certification. This is in line with the situation obtaining in most rural areas where a large proportion of females do not advance beyond high school education. Cultural norms normally

favour the education of the males over the females. 21% of the women did not have any formal education and these were mostly women found in the 51+ years groups. The bracket with the informally employed had the highest number of respondents. This is reflective of the overall picture in the macro environment. The women in this group have small businesses where they sell their wares from agricultural produce, second-hand clothes, foodstuffs, takeaways and other small enterprises. The formally employed consisted of those working as teachers, nurses, non-governmental organisations (NGO) workers and those in government departments.

Reliability Test

The reliability of the elements was estimated using Cronbach's coefficient values as shown in table 3. The Cronbach's alpha value of the constructs range between .881 to 0.941 indicating high internal consistency and reliability. A Cronbach's alpha value of 0.70 and above is acceptable for research purposes, as it means that the questionnaire is measuring the same underlying construct consistently [27].

Table 3. Reliability Analysis

Construct	**Number of items**	**Cronbach's Alpha**
Performance Expectancy (PE)	4	0.940
Effort Expectancy (EE)	4	0.910
Social Influence (SI)	4	0.895
Facilitating Conditions (FC)	4	0.881
Hedonic Motivation (HM)	3	0.961
Price Value (PV)	2	0.941
Price Value (PV)	3	0.922
Technology Adoption / behavioural Intention **(BI)**	3	0.941

Descriptive Statistics

Table 4 displays the means and standard deviations of the constructs and the dependent variable (BI), which is technology adoption.

The performance expectancy construct scored the highest average ($\bar{x}$ =3.850, σ=0.893) with respondents showing a level of agreement that the four variables (usefulness, helps accomplish tasks, increases productivity, increases chances of improving income) measured under this construct influenced their decision to use technology.

Facilitating conditions came second as an influencing construct to technology adoption ($\bar{x}$ =3.800, σ=1.196). This shows that rural women must have the resources they need to access technology, to know how to use technology, for the technology to be compatible with other systems they use and for there to be someone to assist them whenever they face challenges with the technology.

Social influence registered as third ($\bar{x}$ =3.678, σ=0.551). The items measured under this construct showed that it was important to the respondents for people who influence their behaviour to approve of their use of technology, for people who are important to them to approve their use of technology, for the people or resources assist them to learn the use of technology to be helpful and for there to be support systems as they embrace technology.

Effort expectancy was in the middle of the road in fourth place ($\bar{x}$ =3.654, σ=0.627) The four items measured included ease and understandability of technology, ease of skills acquisition, ease of use, and ease of operation.

The hedonic motivation construct was fifth ($\bar{x}$ =3.477, σ=1.030) and focused on whether using technology was fun, enjoyable and entertaining for rural women.

Price Value was the sixth construct ($\bar{x}$ =3.440, σ=0.778). The 2 items measured focused on whether technology provides good value for the money the respondents pay as a fee to access and whether technology provides good value.

The construct with the least averages was the habit construct ($\bar{x}$ =3.259, σ=1.141). The 3 items used to measure this construct focused on whether using technology was a habit for the rural women, whether they were used to using technology and whether it was a must for them to use technology.

Table 4. Descriptive Statistics for BI and the Seven Constructs

Construct	Mean	Standard Deviation	Position
BI	**3.690**	**0.540**	
PE	3.850	0.893	1
EE	3.654	0.627	4
SI	3.678	0.551	3
FC	3.800	1.196	2
HM	3.477	1.030	5
PV	3.440	0.788	6
HT	3.259	1.141	7

Regression Analysis: Influence of the Constructs on Technology Adoption and Intention to Use (BI)

Table 5 shows an R^2 of 0.787 which means that the predictors (PE, EE, SI, FC, HM, PV, HT) explain 78.7% of the independent variable (BI). The remaining 21.3% is explained by other factors not included in this study.

The ANOVA, Table 6 summarises the key components used to determine whether there are any statistically significant differences between the means of the independent groups. Table 6

shows the F value, with 7 and 242 degrees of freedom (df), is 58.19 with a probability of occurrence of <0.0001.

The critical value is a cut-off value, that defines the rejection regions. The value obtained from the F-table is 4.49418, hence the study concludes that there is a significant difference among the means. By extension, this means that the predictors can be used to explain the dependent variable.

Table 5. Model Summary

Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
1	.887[a]	0.787	0.780	0.3879
Predictors: PE, EE, SI, FC, HM, PV, HT				

Table 6. ANOVA[a]

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	157.9912	7	22.5702	58.19	<0.0001
	Residual	113.2425	242	0.4679		
	Total	271.2432	249			
a.**Dependent Variable**: BI						
Predictors: PE, EE, SI, FC, HM, PV, HT						

Discussion and Recommendations

Table 7 showcases results from the inferential analysis which shows that PE, EE, FC and SI are supported and hence influence BI. However, SI, FC and PV are not supported and therefore do not influence BI with respect to Umguza rural women.

PE is critical in influencing technology adoption. In the study, it takes a pole position by ranking, of the factors rural women consider. Other studies have concurred with this result and suggest that when rural women experience and see tangible benefits, their intention to use technology increases [28]. From the study, Umguza women were lured to use technology by experiencing and observing increased agricultural yields by those using mobile agricultural applications for weather and disease control. Some women hinted at experiencing access to a wider market base through selling on WhatsApp business and Facebook marketplace.

However, when the performance of the technology is below expectations, it may bring about rejection and shunning of its use [29]. Issues that arise are lack of training, poor connectivity and applications that fail to meet user expectations.

From the findings, the study recommends that interventions aimed at increasing technology adoption should focus not only on access to technology but also push for enhancements of the perceived performance benefits of the technology. For these rural women, this includes technology that can assist them in managing

their crops, animals, and smallholder plots in order to maximise output. Service providers should concentrate on bringing convenience through digital tools to access connectivity, digital financial services and educational courses to enhance the lives of rural women. It is also important to roll out roadshows to educate women and showcase successful examples of technology adoption.

EE was found to have a moderate influence on technology adoption. The rural women are demonstrated to be at different levels of education which speaks to their literacy levels ranging from highly literate to not literate. It is therefore important that the technology be understandable and easy to use. Studies highlight that the perceived ease of use impacts rural women's willingness and ability to use technology [30]. When technology is viewed as complex or too challenging, it negatively affects its adoption regardless of the benefits. Technology should require minimal technical skills because rural women live in remote areas and may not be able to access technical support. The study suggests that technology providers and retailers should tailor technologies to suit the educational and literacy levels of rural women. The user interface for the applications needs to be user-friendly and allow users to choose the level they want to operate at within the applications, the same way as one would do when playing console or online games. Local content and language are also an important customisation to encourage adoption.

Concerning SI, the findings are in line with other studies [31]. The rural women's intention to use technology is influenced by the suggestions, opinions and recommendations of those important to them. The majority of the respondents, who make up the age bands of twenty-five and forty years, exhibited an affinity for keeping in line with the trends in technology hence the opinions and support of others were important to them. Based on the findings, interventions by the government and stakeholders must leverage on these social structures. The use of testimonials, community leaders and influencers in shaping perceptions and driving technology adoption.

FC significantly impacts technology adoption and according to the study, the construct takes second place in importance after PE. The responses from the respondents show a high level of agreement that having resources available was important to their decision to adopt the technology. Studies done in other developing countries support the findings of this research [32]. There are however studies done in developed countries where they found that facilitating conditions were insignificant as a determinant of technology adoption as there was already widespread availability of infrastructure, digital skills and digital literacy [33]. For this study, FC, is a critical factor as infrastructure like base stations, internet connectivity and smartphones are not universally available to all rural women hence it becomes the foundation for technology adoption. The implication here is that even if technology is useful, the lack of facilitating conditions, limits adoption. It is recommended that government and mobile network operators provide the necessary infrastructure like base stations, affordable mobile phone payment plans and internet connectivity to enable access. This should be supported by training programs to develop skills and opportunities for rural women.

HM does not influence the intention to adopt technology for the rural respondents. Fun, pleasure and entertainment elements in technology were not important to the respondents. Hedonic motivations were merely seen as a hygiene factor that increases engagement with technology and helps in formulating positive attitudes towards technology use [34]. The Umguza women experience sporadic connectivity, and slow speeds due to some areas only accessing 2G networks and lack of electricity so they only use their mobile phones for basic connectivity and do not see the need for hedonic factors. There were also some religious sects that the women

were patrons of that discouraged leisure activities through technology. The findings from the study suggest that service providers need to expand their coverage to remote areas and provide higher access bands like 3G and LTE/4G to rural areas. This will enable faster connectivity speeds, an increase in use cases by rural women and higher revenues for the service providers. Content creators should explore providing relevant, fun content for the rural markets. The government needs to facilitate training on the safe usage of online tools to avoid issues like cyberbullying and exploitation affecting rural women.

PV is not an influence of technology adoption. Other studies support this conclusion [35]. The share of wallet for the rural women for technology use is mandated by available funds and any further change or increase in technology products or choices does not stretch the budget. What is key for service providers and policymakers is to avail cheaper solutions to cater for connectivity needs so that rural women can access more for the same value at no prejudice to their other needs.

The last construct is HT, and it is not supported as a determinant that can influence technology adoption by rural women. Several studies are shown to omit habit as a construct when using the UTAUT2 model, due to users being in the early stages of adoption and warn researchers to refrain from using experience as a proxy to measure habit since experience is necessary but is not a sufficient condition to form a habit [36]. The findings show the importance of driving use over time so that the rural women form a habit, and this can lead to extended use of technology. The strategies for habit formation need to encourage good, frequent and responsible technology use. This can be done through training and upskilling rural women on the importance of digital connectedness for economic and social purposes.

Table 7. Summary of Inferential Analysis

Hypothesis	**Standardised Estimate**	**Standard deviation**	
	Result	**Result**	**Recommendation**
H1.PE influences TA	0.2113	<0.0001	Accept Hypothesis
H2:EE influences TA	0.1259	0.0031	Accept Hypothesis
H3: SI Influences TA	0.1207	0.0318	Accept Hypothesis
H4: FC influences TA	0.4464	<0.0001	Accept Hypothesis
H5: HM influences	-0.0078	0.8774	Reject Hypothesis

TA			
H6: PV Influences TA	0.0397	0.4651	Reject Hypothesis
H7: HT Influences TA	0.0454	0.256	Reject Hypothesis

Conclusion

This study examined the factors affecting technology adoption by rural women in Umguza district in Zimbabwe. Based on the findings and discussions above, the requirements of the paper were satisfactorily met. This study has shed light on the dynamics of technology adoption among rural women, emphasizing the underexplored realm of applying the UTAUT2 model to this demographic. With regards to the constructs of the UTAUT2 model, Performance Expectancy (PE), Facilitating Conditions (FC), Effort Expectancy (EE), and Social Influence (SI), were found to influence technology adoption. Hedonic Motivation (HM), Price Value (PV) and Habit (HT) were rejected as influencers of technology adoption among the women in the Umguza district. Recommendations from the study advocate for tailored solutions, strategies and initiatives that cater for rural women's unique needs and contexts. This study contributes to the evolving landscape of technology adoption research by showcasing the factors affecting adoption behaviours among rural women. The findings pave the way for more targeted and culturally sensitive approaches in enhancing technology adoption initiatives for rural women in Zimbabwe, which may lead to inclusive digital empowerment and societal development

Future Research

Future research should concentrate on the myriad of socio-cultural and religious issues that affect rural communities. A more comprehensive analysis of these factors is required to understand some of the unique issues that arise from religious practices, traditional culturalism and social structures in the rural areas. Future studies need to expand the scope of the study to a nationwide view to capture all the issues at a national level to enable a wider view of factors affecting technology adoption and implementation of solutions.

Conflict of Interest

No conflict of interest was registered by this study as engagements with respondents were done willingly, anonymously and independently. Clear and comprehensive information about the study objectives, procedures, potential risks, benefits, and voluntary nature of participation was provided and informed consent was obtained from participants, ensuring they understood their rights, how their data would be used, and their ability to withdraw from the study at any time By following the above procedure, the writer ensured that conflict of interest was eliminated, thereby ensuring greater transparency and accountability to the research subject.

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