The Influence of Expectations Regarding Performance on the Acceptance of Mobile Phone Banking Services by Smallholder Farmers: A Case of Smallholder Grape Farmers in Dodoma Region, Tanzania

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Abstract
This study uses a cross-sectional survey design to examine the influence of expectations regarding performance on the acceptance of mobile phone banking services by smallholder farmers in Dodoma Region, Tanzania. A total of 360 smallholder farmers were selected randomly for the study. The collected data was analysed using multiple linear regression to assess the relationship between expectations regarding performance and acceptance of mobile phone banking services. The study's findings showed that expectations regarding performance measures (job fit, perceived usefulness, extrinsic motivation, and outcome expectations) have good predictive potential in explaining smallholder farmers' adoption of mobile phone banking services. The findings suggest that smallholder farmers have trust (i.e. perceived usefulness), in using a mobile phone banking system to improve agricultural commercialization. The findings also emphasize that smallholder farmers believe (i.e. job fit) that using mobile phone banking technology is beneficial to them. Furthermore, smallholder farmers believe that people who engage in farming activities are likely to achieve the desired results if rewards and/or incentives are given (i.e. extrinsic motivation). The study draws attention to mobile phone banking service providers to fulfil the expectations of smallholder farmers by providing services that address smallholder farmers' needs. Finally, policy attention should focus on the expected performance of mobile phone banking services used by smallholder farmers in rural areas.

Keywords: Performance, Mobile Phone, Banking Services, Smallholder Farmers

1. Introduction
Mobile phone banking services have contributed to significant advancement in financial inclusion in many developing countries (Lwoga and Lwoga, 2017). Mobile phone banking encompasses the application of mobile phones to conduct mobile banking services (Akhter et al., 2020). Low-income earners or smallholder farmers perceive mobile banking services as substitutes for traditional banking services (Kamotho, 2008). Agriculture is the main economic sector in Tanzania, as it is in other developing countries, and it is dominated by smallholder farmers who cultivate and/or own farmland of less than two acres (Liu and Basso, 2020). Agriculture employs more than 65.5% of the total population in Tanzania (ASDP II, 2017). Despite such a large percentage of the workforce being employed in agriculture, the sector only contributes 29.1% of Tanzania's GDP (URT, 2017). The use of technology such as mobile phone banking services in the commercialization of agricultural products is likely to increase the contribution of the agricultural sector as

a proportion of Tanzania's GDP. There is a lack of empirical evidence measuring the actual use of mobile phone banking services to commercialize agricultural products by smallholder farmers (Parlasca et al., 2022). Smallholder farmers in Tanzania face several challenges, including insufficient financial services and technological limitations that make it difficult to facilitate agricultural activities (Kiberiti et al., 2020). These challenges are exacerbated by the fact that it is unclear why smallholder farmers do not always adopt mobile technology to facilitate agricultural practices. The information and services provided by mobile phones have the potential to transform how rural farmers access agro-meteorological data (Krell et al., 2021). Further, smallholder farmers need to better understand the types of mobile phone banking services available to farmers, how farmers can access this information, and possible factors influencing the use of said services (Krell et al., 2021). If farmers are provided with agricultural data, this may improve economic development by allowing them selectively grow crops that they could sell for increased profit (Wyche and Steinfield, 2016). Among the efforts made to maximize the potential benefit of mobile phone banking services to smallholder farmers is the development of agricultural market information service applications that send crop pricing information to farmers via short message services (Wyche and Steinfield, 2016). This implies that once mobile phone banking services are readily accessible to most smallholder farmers, the developing world will slowly begin to rise economically.

Several studies concerning the use of mobile phone banking services among farmers concentrated on household income, money input intensity, market orientation, and farm productivity (Aggarwal et al., 2020; Batista et al., 2020; Gopane et al., 2020; Hartmann et al., 2021; Abdl-Rahaman et al., 2022). Furthermore, studies done on mobile phone banking services among farmers focused on mobile savings, analyzing the farm household use of mobile banking (Baumüller, 2018) without looking at the expectations regarding performance that smallholder farmers had when they used mobile phone banking services. By using mobile phone banking services, smallholder grape farmers could take a leading role in agricultural commercialization through a large number of small financial transactions in the Dodoma region of Tanzania.

This study focuses on smallholder grape farmers' acceptance of mobile phone banking services and their expectations regarding performance in the Dodoma region of Tanzania for several reasons. Firstly, smallholder grape farmers are more likely to use mobile phone banking services to pay for agricultural inputs and labor. Secondly, smallholder grape farmers interact with buyers who may use mobile phone banking services to effect payments. Previous research has also looked into how smallholder farmers can benefit from mobile phone banking services. In Ghana, smallholder farmers increased their agricultural production by using mobile phone banking services (Issahaku et al., 2018; Abdul-Rahman and Abdulai, 2022). Furthermore, in Uganda and Kenya, using mobile phone banking services for agriculture helped rural smallholder farmers practice modern agricultural methods (Baumüller, 2018). Broadly speaking, smallholder farmers use mobile phone banking services to access financial services that help to pay for agricultural inputs, resulting in increased agricultural production. Expectations regarding the performance of mobile phone banking services can influence

their use.

The findings of this study are beneficial to society considering that it expounds on the factors that influence the acceptance of mobile phone banking services in Tanzania. In addition, this study will help mobile phone banking service providers recognize the socio-economic barriers that prevent a population's acceptance of mobile phone banking services so that they can formulate strategies to address these obstacles. This would increase the use of mobile phone banking services and help bridge the divide between rich and poor, as well as rural and urban populations, and support the national agenda for economic growth.

The main contributions of this study to future research are twofold: Firstly, knowledge generated in this study serves as a data source for policymakers during policy reviews to call for the increased acceptance of mobile phone banking services among smallholder farmers. Secondly, the study's findings provide empirical evidence as to the performance-related factors influencing the acceptance of mobile phone banking services by smallholder farmers in rural areas in Tanzania relevant to theory construction.

2.0. Literature review
2.1. Theoretical review
The foundation for this study comes from the Unified Theory of Acceptance and Use of Technology (UTAUT) model developed by Venkatesh, *et al.,* (2003). This model came about from the fusion of eight theories and models together. These are the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), and the Combined Theory of Planned Behaviour/Technology Acceptance Model (C-TPB-TAM), the Model of PC Utilization (MPCU), the Innovation

Diffusion Theory (IDT), and the Social Cognitive Theory (Williams, *et al.*, 2011). By merging these theories and models together, a new model emerged with four main variables mediated by gender, age, experience, and willingness to use, namely expectations regarding performance, expectations pertaining to effort, social influence, and facilitating conditions. Expectations regarding performance was extracted from the four main variables of UTAUT and was defined by Venkatesh et al. (2003) as the extent to which an individual believes that using an information system will help him or her to attain benefits in job performance. Albashrawi and Motiwalla (2020) explained expectations regarding performance as an indicator of maximizing efficiency and productivity in the production process. There is a direct link between expectations regarding performance as measured by perceived usefulness, relative advantage, job fit, expectations regarding outcomes, and extrinsic motivation (See, for example, Moore and Benbasat, 1991; Thompson et al., 1991; Compeau and Higgins, 1995; Davis et al., 1992). Perceived usefulness is about trust in using a system to improve job performance. For example, new technology is perceived to be superior to its predecessor. In Job-fit individuals believe that the use of technology improves job performance. The expectation of performance-related behavior that deals with job-related outcomes has been termed expectations regarding outcomes. Finally, extrinsic motivation is described as the belief that people engage in an activity because it is necessary to attain desired outcomes other than the activity itself, such as improved job performance, salary, and promotions.

2.2. Linking expectations regarding performance and acceptance of mobile phone banking services

The level of acceptance and use of technology, particularly mobile phone banking services, has been demonstrated in different studies to be influenced by expectations regarding performance. Technology users have expectations of how they will benefit from utilizing it; otherwise, acceptance would be questionable. Users' willingness to accept mobile phone banking services is influenced by their expectations about technology use (Sarfaraz, 2017). However, the empirical evidence on the actual use of mobile financial services for agricultural activities connected to expectations regarding performance is lacklustre (Parlasca, et al., 2022). Although there are several advantages to using mobile devices for banking, the increased efficiency as a result of technology is important (Shaikh et al., 2021). The successful use of mobile banking services largely depends on the motivation for using said technology. These motivations are associated with the expectations regarding performance that a customer has (Alalwan et al., 2017). The technology used in the electronic services domain is influenced by the associated expected benefits (Purwanto and Loisa, 2020).

Expectations regarding performance are taken into account for all agricultural technology users, notably smallholder farmers, where it has been discovered to be particularly significant for younger farmers (Beza et al., 2018). Furthermore, for mobile phone services targeting farmers to be successful, users must have favourable expectations when using them (Malima, et al., 2015). Other studies have found that smallholder farmers, like other users of technology, prefer to use it when it is regarded as useful and suitable for their purpose (See, for example, Akhter et al.,2020; Prastiawan et al.,2021; Owusu et al., 2021; Alalwan et al., 2016). For smallholder farmers, the need for mobile phone banking services is also influenced by expectations regarding outcomes, and extrinsic motivation (See, Compeau and Higgins, 1995; Chaurasia et al., 2019; Davis et al., 1992). Other studies have not considered expectations regarding performance when studying the acceptance of mobile phone banking services among smallholder farmers (Asravor, et al., 2021).

This study differs from other literature in the following way; no study on the acceptance of mobile phone banking services has been conducted on smallholder grape farmers in rural areas of Tanzania.

3.0. Methodology

This study was carried out in the Dodoma Region of Tanzania where smallholder grape farmers predominate. The study used a cross-sectional survey design that involved a total of 360 smallholder grape farmers obtained using simple random sampling. The study area was chosen for the fact that farmers who grow grapes use mobile phone banking services more than smallholder farmers who grow other crops (Nyagango, et al., 2023). Smallholder grape farmers use mobile phone banking services to pay for labour and agricultural inputs, as well as receive payments for the produce (Nyagango, et al., 2024).

3.1. Sampling Technique

The study was conducted in three (3) districts of the Dodoma Region in Tanzania, namely Dodoma Urban, Chamwino, and Bahi. According to the district agricultural extension officers' statistics, there were 2167 smallholder grape farmers in those districts. The sample size for the study was determined by a sample size formula for the finite

population as provided by Kothari (2018, p.179). The multi-stage sampling technique was employed to sample responding smallholder farmers (Asravor et al., 2021). Multi-stage sampling was chosen because the population of the study was too vast, and reaching every smallholder farm household was impossible. The use of multi-stage sampling is time-efficient and cost-effective, and it helps reduce a large population into smaller groups. The first stage involved the use of a purposive sampling technique to select three (3) districts engaged in smallholder grape farming in the Dodoma Region. The second stage involved the use of purposive sampling to select six (6) wards with high grape production in the selected districts. The third stage was to select one (1) village with high production from each ward to make a total of six (6) villages. The last stage involved a simple random sampling technique to sample the responding smallholder grape farmers per village. In this stage, for each selected village, the names of smallholder grape farmers were obtained from village offices. Papers with names of smallholder grape farmers were mixed followed by a random selection of sixty (60) respondents. Since the study involved six (6) wards, and each ward was represented by one (1) village; from each village a sample of 60 smallholder grape farmers were randomly selected. This selection makes a sample of 360 smallholder grape farmers (heads of households) to whom the survey questionnaires were provided.

3.2. Data Collection

The study used a survey questionnaire to collect quantitative data from smallholder grape farmers. The survey questionnaire had two parts; the first part had questions about the characteristics of smallholder grape farmers, while the second part had questions concerning expectations regarding the performance of smallholder grape farmers. The second part of the questionnaire focused on research variables namely perceived usefulness, relative advantage, job-fit expectations regarding outcomes, and extrinsic motivation. Questions on research variables were structured according to the Likert scale where respondents were required to indicate their level of agreement with the provided statements. This questionnaire was adapted from previous studies (Venkatesh, *et al.,* 2003; Batani *et al.,* 2019; Lwoga and Lwoga, 2017; Sing and Srivastava, 2018) and modified to suit this study. The Likert scale is often used to collect opinion data (Saunders et al., 2012) and provides a convenient way to measure unobservable constructs (Jebb et al., 2021). Also, the Likert scale is used to study social attitudes (Kothari, 2004; Lionello, et al., 2021) similar to our study on the acceptance of mobile phone banking services among smallholder grape farmers. Further, the Likert scale has been deemed an efficient method to gather opinions or factual information and assess attitudes (Lam and Green, 2019).

For the Likert scales, we first established what scores fall into which categories, 1-Strongly agree, 2-Agree, 3-Neither agree nor disagree, 4-Disagree, and 5-Strongly disagree (Lipovetsky, 2021). The use of multiple linear regression for the variables measured on a Likert Scale is based on the fact that Likert-type data found consistent support for the use of variables as approximately continuous (Boone and Boone, 2012; Harpe, 2015). This study followed the work adopted by Lipovetsky, 2021; Willits et al., 2016; Sun et al., 2021, Tutz, 2021; Johnson and Creech, 1983; Norman, 2010; Sullivan, and Artino, 2013; and Zumbo and Zimmerman, 1993 where Likert or

ordinal variables with five or more categories can often be used as continuous without any harm to multiple linear regression analysis. In such cases, researchers usually refer to the variable as an "ordinal approximation of continuous variables".

3.3. Methods of Analysis

Descriptive statistics were used to profile the characteristics of respondents while multiple linear regressions were performed to analyze the influence of expectations regarding performance on the acceptance of mobile phone banking services. Since the study responses were in the Likert scale, responses were transformed and grouped into continuous variables to adhere to conditions for conducting multiple linear regression.

Before conducting multiple linear regression analysis, Kaiser Meyer Olkin (KMO) of Exploratory Factor Analysis (EFA), and Bartlett's Test were employed to test sample adequacy. The recommended minimum value by Kaiser Meyer Olkin (1958) was 0.5. The values ranging from 0.5 to 0.7 are ordinary, values ranging from 0.7 to 0.8 are good, and values ranging from 0.8 to 0.9 are immense, while those above 0.9 are excellent. The data collected yielded an overall KMO of 0.871 which falls in the range of immense, and Bartlett's Test is significant at p=0.000 as Table 1 indicates. This provides evidence that the overall sample size for this study was adequate.

Table 1: Kaiser Meyer Olkin and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.871
Bartlett's Test of Sphericity	Approx. Chi-Square (χ^2)	7269.851
	df	435
	Sig.	.000

Source: Field Survey (2023)

The data was analysed using multiple linear regression because it allows for the analysis of several independent variables with a single dependent variable (Khademi et al., 2017). The study used a multiple linear regression equation to express the existing relationship between smallholder grape farmers' acceptance of mobile phone banking services and expectations regarding performance. Expectations regarding performance were measured by perceived usefulness, relative advantage, job fit, expectations regarding outcomes, and extrinsic motivation.

The multiple linear regression equation was given by:-

$$Y = \alpha_{\square} + \text{ß}X_{1_{\square}} + \gamma Z'_{\square} + \mathcal{E}_i \ldots\ldots\ldots\ldots (1)$$

Where,
Y = smallholder grape farmers' acceptance of mobile phone banking services   X1= Perceived usefulness
Z′= Vector of other explanatory variables such as Relative advantage, Job-fit, Expectations regarding outcomes, and Extrinsic motivation
$\mathcal{E}$= error term
$\mathcal{E}_{i,}$= error term
α = constant value,
ß and γ are the coefficients of explanatory variables.

The measurement for the explanatory variables is indicated in Table 2

Table 2: Variables and Measurements

Name of Variable	Measurement
Relative advantage	Cost of service and convenience
Job Fit	Person-environment fit and users' personal interest
Expectations	Benefit felt in technology use
Perceived usefulness	Rating the product
Extrinsic motivation	External benefits gained

4. Results

Findings in Table 3 revealed that 77.2% of heads of households were male, while 22.8% of heads of households were female. These results indicate that the majority of

respondents were male. Also, the majority (62%) of respondents were aged between 36 and 55 years, while 69% were married. Additionally, 64% of respondents had attained at least some secondary education. The educational level of the sample suggests that respondents possess adequate education to be able to provide useful information to answer the study questions. Furthermore, the study revealed that smallholder grape farmers had sufficient experience with mobile phone banking services and 62% had used

the services for four to six years. This experience is adequate to describe the aspects that influence mobile phone banking acceptability. When it comes to annual income, 21.9% of smallholder grape farmers earned between Tanzanian Shillings (TZS) 2,000,001 - 2,500,000 and TZS 1,500,001 - 2,000,000 annually, while 4.5% of respondents earned below TZS 500,000.

Table 3: The Demographic Characteristics of respondents (N= 360)

	Variable	Frequency	%
Gender	Male	278	77.2
	Female	82	22.8
Age of respondents (Years)	< 35	97	27.0
	36 –55	223	62.0
	56+	40	11.0
Marital Status	Single	25	7.0
	In relationship	58	16.1
	Married	248	69.0
	Separated	29	7.9
Education	Didn't attend	9	2.5
	Primary Education	121	33.5
	Secondary Education	131	36.4
	College Education	99	27.6
Annual Income	Below TZS 500,000	16	4.5
	TZS 500,001 - 1,000,000	29	8.1
	TZS 1,000,001 - 1,500,000	56	15.4
	TZS 1,500,001 - 2,000,000	79	21.9
	TZS 2,000,001 - 2,500,000	79	21.9
	TZS 2,500,001 - 3,000,000	64	17.7
	TZS 3,000,000 Above	24	6.7
	No Response	13	3.7
Experience in using mobile phone banking services (years)	< 3	60	16.6
	4 –6	223	62.0
	7 –10	77	21.4
Time spent walking to access the mobile phone Banking services (minutes)	< 11	252	70.0
	11 –20	40	11.0
	21 –30	43	12.0
	31 +	25	7.0

Results in Table 3 show that only 7% of smallholder grape farmers spend more than 31 minutes walking to reach the

mobile phone banking service centres, while the majority (70%) spend less than 11 minutes walking toward them. This

would seem to indicate that distance has little to do with preventing access to mobile phone banking services.

For the robustness of the results, a multicollinearity test was conducted to check the level of correlation between the explanatory variables (See Table 4). By calculating the Tolerance and Variance Inflation Factor (VIF) values, the results showed the lowest Tolerance value of 0.432 and the highest of 0.989. The

analysis also indicates a VIF of 2.316 for the highest and 1.011 for the lowest values which are below the cut-off of 10 (Senaviratna and Cooray, 2021). The results indicate the absence of multicollinearity between the variables constituting a regression model. Therefore, the results were deemed ready for interpretation.

Table 4. Multicollinearity test results

No	Variable	Tolerance	VIF
1	Perceived usefulness	0.873	1.146
2	Relative advantage	0.989	1.011
3	Job-fit,	0.989	1.011
4	Expectations regarding outcomes	0.432	2.316
5	Extrinsic motivation	0.439	2.277

Effect of confounding factors on acceptance of mobile phone banking services

The dependent variable in this model was the acceptance of mobile phone banking services which is defined as a decision to completely adopt an innovation (Rogers, 2003). Similarly, Abbas et al., (2018), defined acceptance of mobile phone banking services as the implementation, usage, utilization, or satisfaction of a particular innovation. The acceptance of mobile phone banking services was measured by considering the frequency of use, intention to use, satisfaction, and comfort when using mobile phone banking

services. The influence of confounding factors (age, education, income, gender, and education of respondents) on the acceptance of mobile phone banking services was tested with multiple regressions. The chi-square (χ^2) was employed to test the control of gender on the acceptance of mobile phone banking services. The summary of the influence of age, level of education, annual income, and marital status on acceptance of mobile phone banking services is presented in Table 5. Together, the confounding factors and explanatory variables were analysed to verify the robustness of the results.

Table 5: Influencing factors on acceptance of mobile phone banking services

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	1.656	0.052		33.044	0.000
Age	-0.072	-0.024	-0.220	5.990	0.000
Level of Education	0.098	0.017	0.254	5.793	0.000
Annual Income	0.052	0.015	0.134	3.921	0.004
Marital status	0.024	0.014	0.046	1.015	0.310
Perceived Usefulness	0.806	0.111	0.163	7.274	0.000
Relative Advantage	0.138	0.123	0.024	1.122	0.262
Job-fit	0.153	0.076	0.043	2.027	0.043
Expectations regarding outcomes	2.389	0.134	0.567	17.815	0.000
Extrinsic motivation	1.429	0.135	0.335	10.610	0.000

a. Dependent Variable: Acceptance of Mobile Phone Banking Service
R = 0.820, R^2 = 0.662, Adjusted R^2 = 0.660, Standard error estimate = 1.88360,
Durbin-Watson = 1.969, F-Statistics = 387.345, prob.(F-Statistics) = 0.0000

The regression results revealed an adjusted R^2 of 0.660. This regression model specifically indicates that the explanatory and confounding factors (age, level of education, annual income, marital status) jointly with explanatory variables (perceived usefulness, relative advantage, job fit, expectations regarding outcomes, and extrinsic motivation) explain 66% of the systematic variation in the acceptance of mobile phone banking services by smallholder grape farmers in Dodoma. The remaining 34% is explained by other factors. This implies that confounding factors have contributed to the acceptance of mobile phone banking services among smallholder farmers. Also, the significance of the F- value at 5 per cent implies that the explanatory and confounding factors are relevant in explaining the acceptance of mobile phone banking services by smallholder grape farmers. The Durbin-Watson statistic of 1.969 in the model suggests the absence of autocorrelation along with its serious consequences.

For the case of confounding variables, the regression revealed age, level of education, and annual income to be significant at $p<0.05$ hence influencing acceptance of mobile phone banking services. The regression results revealed age to be negative, but that it significantly affects the acceptance of mobile phone banking services, while the level of education and annual income positively and significantly affect the acceptance of mobile phone banking services. However, marital status failed the significance test at the 5 per cent level, implying that this factor is not effective in influencing the acceptance of mobile phone banking services by smallholder grape farmers in Dodoma, Tanzania. The negative finding on the influence of age implies that older individuals are less likely to accept mobile phone banking

services when compared to younger individuals. It is widely accepted that young people appear to be more inclined to innovation than older people. Similarly, the positive influence of annual income means that as income increases the higher the likelihood that smallholder grape farmers will accept mobile phone banking services. Thus, wealth and technology acceptance are decidedly related.

For the case of explanatory variables expectations regarding outcomes have the highest t-statistic value of 17.815 while extrinsic motivation has the t-statistic value of 10.61. The higher the t-statistic value of the measurement item, the more significant it is. Perceived usefulness, expectations regarding outcomes, and extrinsic motivation were significant at 1%, while job fit was significant at 5%. However, the relative advantage was insignificant with a p-value of 0.262. Perceived usefulness, expectations regarding outcomes, and extrinsic motivation, all showed a positive and statistically significant impact on smallholder grape farmers' acceptance of using mobile phone banking services. Similarly, job fit revealed a positive and statistically significant impact on smallholder grape farmers' acceptance of using mobile phone banking services.

A one-unit increase in smallholder grape farmers' expectations regarding outcomes results in a 2.3-unit increase in smallholder grape farmers' acceptance of mobile phone banking services. Similarly, a one-unit increase in extrinsic motivation results in a 1.4-unit increase in smallholder grape farmers' acceptance of mobile phone banking services. In turn, a unit increase in both job fit and perceived usefulness leads to a corresponding unit increase in smallholder grape farmers' acceptance of mobile phone banking services. This

implies that the coordination of mobile phone banking services with the day-to-day activities of smallholder grape farmers increases the possibility of smallholder grape farmers accepting the use of mobile phone banking services. The findings show that smallholder grape farmers perceive the use of mobile phone banking services as a way to improve agricultural performance. Furthermore, the findings show that smallholder grape farmers believe (i.e. job-fit) mobile phone banking technology is relevant when performing their daily activities and is beneficial to them. In addition, smallholder grape farmers believe that people engaged in grape farming while using mobile phone banking services are more likely to achieve desired outcomes, especially if rewards or incentives are given (i.e. extrinsic motivation*)*

5. Discussion of findings

The regression analysis included the control variables such as age, level of education, annual income, and marital status to verify the robustness of the results and to see if they could lead to different results (Abayomi et al. 2019). However, after including the control variables the results remained the same. Furthermore, the study considered whether expectations regarding performance (i.e. perceived usefulness, relative advantage, job fit, expectations regarding outcomes, and extrinsic motivation) could have a significant influence on the acceptance of mobile phone banking services by smallholder grape farmers. This describes how the basis for the acceptance of Information, Communication, and Technology (ICT) products is rooted in the types of characteristics that a particular ICT product establishes as a foundation for acceptability (Shaharudin, et al., 2012). Acceptance of technology by smallholder grape farmers requires appropriate characteristics capable of distinguishing and defining the technological needs of said smallholder grape farmers. As stated in Tanzania's National ICT policy of 2016, the development and implementation of ICT products suited to the agriculture sector requires a review of the appropriate technological environment within which it will be implemented for proper action (URT, 2016). Our findings showed a significant relationship between smallholder grape farmers' expectations regarding performance (i.e. perceived usefulness, job fit, expectations regarding outcomes, and extrinsic motivation) and their acceptance of mobile phone banking services in the Dodoma region of Tanzania.

These findings broadly support other studies in this area when linking expectations regarding performance and the acceptance of mobile phone banking services. These results are consistent with those of Gupta and Arora (2019) who revealed expectations regarding performance to be a significant predictor of m-payment behaviour intention in India. Similarly, our findings are consistent with the findings of Dwivedi et al. (2017) who identified expectations regarding performance as the most powerful driver of behavioural intention to accept and use IT.

Additionally, our findings corroborate the ideas of Rahi et al. (2018) that expectations regarding performance have a positive and significant influence on predicting users' intentions to accept mobile phone banking services. Similarly, Malima et al. (2015) revealed that expectations regarding performance have a positive and significant influence on predicting behavioural intention to use mobile phones for agricultural marketing. Engotoit, et al. (2016) revealed that expectations regarding performance have a significant positive

association with behavioural intention. Furthermore, Batani et al. (2019) proved that expectations regarding performance have a significant association with the use of mobile phones by smallholder farmers in Zimbabwe. Likewise, Chang, et al. (2019) indicated that expectations regarding performance have a positive and significant influence on the acceptance of behavioural intention to use online hotel booking services. A study by Al-Saedi *et al.,* (2020) revealed that expectations regarding performance have a positive and significant influence on the acceptance of mobile banking. In addition, Shaikh et al. (2021) found that risk perceptions, effort, and expectations regarding performance all have a significant impact on one's willingness to adopt mobile banking services. In addition, Sharma et al. (2020), when modelling online Internet banking acceptance in Fiji, found that expectations regarding performance had a beneficial impact on Internet banking use.

While this study demonstrates that expectations regarding performance are the foundation for smallholder grape farmers to accept mobile phone banking services, it also demonstrates that not all assessment items are worthwhile, particularly relative advantage. Yet, perceived usefulness, expectations regarding outcomes, job-fit, and extrinsic motivations all have a major impact on mobile phone banking services being accepted by smallholder grape farmers. Our results when compared with previous literature are detailed as follows:

5.2.1　Perceived Usefulness

Our findings showed that smallholder grape farmers perceived usefulness had a positive and significant impact on the acceptance of mobile phone banking services. The findings of our study are comparable to those of Kumar et al.

(2020), who found that perceived usefulness has a positive and significant beneficial effect on mobile banking adoption. Perceived usefulness was found to be a significant predictor of customer behavior (See, Prastiawan et al., 2021; Akhter et al., 2020; Sulaiman and Jauhari, 2021; Owusu et al., 2021; Ho, 2020). A similar study in Tanzania found that perceived usefulness in the marketing telecommunication industry had a significant effect on mobile banking acceptance (Chille et al*.,* 2021).

5.2.2　Job-fit

Our findings show that the job fit of the service has a positive and significant influence on the acceptance of mobile phone banking services. These findings imply that smallholder grape farmers believe mobile phone banking technology to be beneficial to them when addressing their financial needs. This is similar to Alalwan et al. (2016) on consumer acceptance of mobile banking in Jordan. Further, Sharma et al. *(*2017) revealed a significant influence of job fit on mobile banking adoption. This means that smallholder grape farmers believe that using mobile phone banking technology will benefit them (i.e. it is a good fit for their work).

5.2.3　Expectations　regarding Outcomes

Our findings showed that expectations regarding outcomes from using the service had a positive and significant influence on the acceptance of mobile phone banking services. These results mean that increasing smallholder grape farmers' expectations regarding outcomes will further increase the acceptance of mobile phone banking services. A study by Compeau and Higgins (1995) pointed out that expectations regarding outcomes represent the behavior's performance-related significance. The findings of our study corroborate with the findings of

Hariyanti et al., (2020) that expectations regarding outcomes influence acceptance and use of mobile banking services. Service users calculate the effects of using the technology before they opt to use it. Expectations regarding outcomes promote technology use (Kwahk et al., 2018) especially when the services are free to use. Also, the use of mobile banking services is inclined to favor outcomes expected by the users (Islam et al., 2019). Further, Alruwaie et al., (2020) revealed personal expectations regarding outcomes can represent a belief in technology use. Similarly, smallholder grape farmers will accept using mobile phone banking services provided they help them attain their expected outcomes.

5.2.4 Extrinsic Motivation
Extrinsic motivation is the belief or perception that consumers/users will want to do something because they believe that it will help them obtain valuable outcomes that are unrelated to the activity (Davis et al., 1992). Our findings showed that smallholder grape farmers' possessed extrinsic motivation to use mobile phone banking services. These findings imply that improving mobile phone banking services' projected performance will boost their adoption and, as a result, their use. The outcomes of this study support the conclusions of Chaurasia et al., (2019) on the intention to adopt M-payment in India. Our study findings are also similar to Sharma (2019) who revealed that whether or not technology is embraced depends on the perceived value of outcomes. Similarly, the findings of Goularte et al., (2018) conclude that the use of mobile banking is motivated by insight into the perceived value of outcomes. In a study by Singh (2021), extrinsic motivation is considered to bring about individual acceptance of mobile banking.

This study adds to the body of knowledge of research in the field of mobile phone banking services, particularly when it comes to expectations regarding performance as an influence on the acceptance of mobile phone banking services by smallholder grape farmers in the Dodoma region of Tanzania. The findings of this study call for a review of Tanzanian ICT policy to instruct mobile phone banking service providers to address the needs of smallholder farmers when using mobile phone banking services.

6. Conclusion
This study examined smallholder grape farmers' acceptance of mobile phone banking services and their expectations regarding performance in Dodoma, Tanzania using a cross-sectional survey design. The study's findings showed that expectations regarding performance indicators (i.e. job fit, perceived usefulness, extrinsic motivation, and expectations regarding outcomes) all have good predictive potential in explaining smallholder grape farmers' adoption of mobile phone banking services in Dodoma, Tanzania. This implies that smallholder grape farmers are motivated by perceived usefulness, job fit, expectations regarding outcomes, and extrinsic motivation for the acceptance of mobile phone banking services. Overall, the study concludes that the use of mobile phone banking services improves smallholder grape farmers' productivity as they believe that mobile phone banking services are relevant in facilitating their daily activities. It is believed that people engaged in grape farming activities while using mobile phone banking services are likely to achieve their desired outcomes when rewards or incentives are given. The study draws policy implications based on the findings that expectations regarding performance has good

predictive potential in explaining smallholder grape farmers' acceptance of mobile phone banking services, hence suggesting policy reviews to enhance the acceptance of mobile phone banking services by smallholder farmers. Concurrently, Tanzania's ICT policy should reflect the concerns of smallholder farmers in order to enhance the commercialization of agricultural products using mobile phones. Finally, mobile phone banking service providers need to fulfil the expectations of smallholder farmers by providing services that address their needs. These findings have major implications for smallholder farmers who use mobile phone banking services around the world.

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